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Pensions for Railwaymen

THE contributory pensions scheme for British Railways staff and London Transport railwaymen approved in principle and now under consideration by the Minister of Transport, Mr. Alan Lennox-Boyd, must by its very magnitude be a landmark in the history of industrial relations in this country. Details are not yet available. It seems, however, that the scheme will embrace the wages grades hitherto mostly unprovided for in the various superannuation schemes inherited from the railway companies. Pensions are to be on a contributory basis, with age and service as determining factors. Many points still have to be settled; but in whatever form the scheme emerges its cost to the British Transport Commission is bound to be great, with some 600,000 railwaymen covered in all. Whether the B.T.C., although its imminent report for 1952 may well disclose a considerably greater working surplus than for the previous year, now is in a position to embark on such a costly venture is problematical. Nor, with increased road competition resulting from the new Transport Act, is the financial outlook for the near future bright, despite the new freedom for the railways to help themselves in the matter of charging. On the other hand the problem of recruiting and retaining railway staff in conditions of full employment, especially in some wages grades, must be faced. Although the situation recently has improved, the railways, more particularly in the more densely populated areas, still tend to be handicapped by staff shortages; these, though often local and temporary, hinder development and militate against giving good service. A pensions scheme covering all grades should go far to increase the attractions of railway service. The attractions already include security, of which the appeal is beginning once more to make itself felt amid the lure of better paid and often less arduous employment with more regular hours—but less security. Furthermore, a pensions scheme is preferable to the wage increases which some elements in the railway trades unions are threatening to demand. It is not too much to hope that the unions will accept a pension scheme with its long-term benefits, and forbear to press for wage increases which eventually can only do economic harm to those they are designed to help.

Sir Sam Fay and Signalling

SIR SAM FAY, whose death, at the age of 96 was recorded in last week's issue, was one of the first operating officers to see the possibilities of power signalling and track circuit controls and to recommend extended trials of them. Much interest had been awakened by the signalling exhibits at the Paris Exhibition in 1900, and Fay was instructed by the General Manager of the L.S.W.R., Sir Charles Owens, to study the question while on holiday in the U.S.A. On his return he gave an interview to the London press, the reports of which announced that his company had decided to make a beginning by applying the pneumatic power system and that Fay believed we were approaching "a complete revolution all the way round" in such matters. He looked forward to seeing all intermediate signalling between stations and junctions effected automatically. A pneumatic installation was opened at Grateley, on the L.S.W.R. main line between Andover and Salisbury, in the summer of 1901, and automatic signals between there and Andover in 1902. This equipment was then applied between Woking and Basingstoke, at Staines, Salisbury, and Clapham Junction; and on the G.C.R. at Manchester and on the Guide Bridge widening. During Fay's General Managership of the G.C.R. several other notable signalling advances were made on that line.

Record Results in Nigeria

THE results of the Nigerian Railway for 1952-53 make encouraging reading. They are by far the best which the system has ever achieved and far exceed the satisfactory figures of the preceding year. The improvement was brought about, moreover, almost entirely by improved operation—a significant vindication of the organisation of combined traffic and locomotive running which came into being in 1951. Train and wagon loads were increased and better use was made of available motive power. Net ton miles rose by more than 20 per cent to 827,246,000, and tonnage hauled to 2,086,000, compared with 1,752,000 in 1951-52. Earnings at £10,500,000, were up by over £2,300,000. The increasing importance of goods traffic for local consumption is reflected in a 12½ per cent increase in this class, to 517,754 tons; the tonnage of groundnuts for export, a less dependable commodity from the railway's point of view, was 338,427. The average net freight train load rose from 181 to 206 tons and net ton-miles per train engine hour from 1,970 to 2,254.

Tackling New Zealand Problems

THE New Zealand Railways Commission has lost little time since it took office at the beginning of the year in grappling with the question of reducing expenditure on the railways, which in the last financial year exceeded revenue by £3,000,000. Although it has found it necessary to increase suburban fares and some freight rates, as recorded on other pages, the increases have been the minimum consistent with the need to augment revenue, and the Commission's decision was not taken until it was satisfied that no other course was possible. The Commission has been considering ways of improving service to the public and conditions for the staff, making plans for using more railcars, and examining the question of staff recruitment. As it points out in its first public statement, possible economies resulting from co-ordinating rail

and road activities, are not matters which can be settled in a few months, but progress is being made with investigations into these and other problems. The Commission announces that it will take immediate steps to acquaint the public and the staff with its decisions on the development of the railways.

Overseas Railway Traffics

THE last two weeks of May brought decreased receipts on the Antofagasta (Chili) & Bolivia Railway; the drop in the week ended May 22 was £4,966 and in the following week £35,777, making the aggregate decrease from the beginning of the year £64,465. The Paraguay Central continues to show satisfactory increases—G291,212 and G315,997 in the weeks ended May 22 and May 29 respectively. Costa Rica results for April were up by C 67,001, bringing to C 1,632,360 the aggregate increase since July 1 last year. Net earnings of the Canadian Pacific for April were $2,096,000, or $339,000 more than in April, 1952; the aggregate net earnings from January 1 to the end of April, however, showed a decrease of $290,000 on the corresponding period of last year. The Canadian National Railways net revenue in April was $4,650,000, an increase of $2,529,000; the aggregate decrease was $4,693,000. South African Railways earnings continue to be slightly down on last year. The aggregate for the six weeks from April 1 to May 16 was £12,896,434, compared with £13,172,441 last year.

New Moves in Cuba

THE affairs of the United Railways of Havana promise to take an interesting turn, though, in view of past disappointments, hopes that a sale is imminent would be premature. Reports from Havana say that Mr. Axel Wenner-Gren, the Swedish millionaire, has had discussions with the President of Cuba, though their outcome has not been disclosed. What is certain is that Mr. W. R. Tomkinson, Deputy-Chairman of the company, is in Cuba at the invitation of Mr. Wenner-Gren, who is said to be interested in acquiring the United system, and possibly others, with his blocked sterling and dollars. Whether Mr. Wenner-Gren's intention is connected with the new monorail system which he has sponsored and, as recorded in our August 22, 1952, issue, has been under test near Cologne, is conjectural. It is possible that if he bought the United Railways he might find one of its branches suitable for a commercial trial of the monorail. One of his conditions of purchase is stated to be that the Cuban Government shall abolish the preferential rates for carrying sugar, a move that the sugar interests will strenuously resist. Whatever the result of the discussions the Secretary-General of the Cuban Confederation of Workers has agreed to solve the problem of superfluous staff and high wages which has beset the railway since the end of the war.

Increased Traffic in South Africa

THE number of passenger journeys recorded on the South African Railways during 1952 was 267,811,001, an increase of 8,712,985 on the preceding year. Suburban passenger journeys rose by 6,971,373, from 230,779,970 to 237,751,343, and long-distance journeys by 1,741,612, from 28,318,056 to 30,059,668. The great increase in suburban passenger journeys has been a noteworthy trend for some years. In the Cape the number of journeys has slightly more than doubled since 1938 and the increase has been greater in other suburban areas. The administration is keeping abreast of this continuing expansion by extending and improving its electric services in the Cape and on the Reef. Goods tonnage increased considerably more than was expected, by 4,128,060 tons, or 6·4 per cent. more than in 1951. The total of 68,318,823 tons was a new record. Coal conveyed totalled 25,478,495 tons. The S.A.R. has been moving large tonnages of coal during the past few months; by hauling 1,833,330 tons from the mines of the Transvaal and Free State in March it set up a record, exceeding the previous record tonnage by 34,587 tons.

Some Indian Light Railways

LITTLE is generally known in this country of the light railways of India, except perhaps the Barsi. The pioneer and by far the largest owner is Martin & Company of Calcutta. This firm's first two lines were the Howrah (Calcutta)-Amta, and Howrah-Sheakhala, both of 2-ft. gauge and opened for traffic in 1897; their combined mileage is 63. They share Howrah Maidan Station, from which there are 64 train departures daily. The Howrah-Amta line carried 800,000 passengers in 1900, but in 1951 the figure had risen to nearly 6,000,000. The same company's Bukhtiarpur-Bihar, Baraset-Basirhat, and Shahdara (Delhi)-Saharanpur lines were opened in 1903, 1905 and 1907, respectively; they are of 2 ft. 6 in. gauge and total 270 miles. In 1911 there followed the Arrah-Sasaram, and in 1922 the Futwah-Islampur. Collectively, these seven little railways carry on an average about 15,000,000 passengers a year. Martin also constructed other light lines such as the Arakan, the Nepal Government, and Chaparmukh-Silghat Railways, the last named a metre-gauge line 51 miles long. Martin & Company absorbed the well-known firm of Burn & Company, which built the first section of track for the East Indian Railway, and it acted as agents for the Bengal Iron & Steel Company, from which has developed the great Indian Iron & Steel Company. Another Martin activity is the Indian Standard Wagon Company, which has built over 29,000 wagons for Indian railways since 1920.

Arnhem-Zwolle Electrification

THE ceremonial inauguration of electric traction between Arnhem and Zwolle on the Netherlands Railways took place on May 15. Public services began with the summer timetable on May 17, as recorded on another page this week. Electric services had been introduced previously between Arnhem and Zutphen, so that the new work inaugurated at the ceremonies of May 15 was between Zutphen and Zwolle. This latest opening completes the first phase of the Netherlands Railways electrification programme and means that 1,351 km. (839·5 miles) out of the total of 3,210 km. (1,994·6 miles) are electrified. These conversions are estimated to be able to realise an annual saving of 645,000 *tonnes* of locomotive coal annually. An interesting technical development incorporated in the new installations is a means for avoiding the expense of connection to a local power supply at a track-sectioning cabin. The method adopted is to filter out and rectify the rectifier harmonics, and to use this source for lighting. There are many occasions when engineers would gladly dispense with the need to link up with the local power network simply to provide light in a track-sectioning cabin, which is remotely controlled and has its contactor operating coils connected to the traction supply. This Netherlands Railways development removes the necessity and finds useful work for a characteristic of rectifier circuits that is normally something of a nuisance.

Power for Transport

SOME figures illustrating the purposes to which the national fuel consumption is applied were quoted this week by Sir John Hacking, Deputy Chairman (Operations), British Electricity Authority, in his Presidential Address to the British Electrical Power Convention at Torquay. Nearly 207 million tons of coal, and oil and petrol equivalent to about 23 million tons of coal, were used in producing energy in 1952, he said, and of the 25 to 30 per cent of national fuel consumption which went towards producing mechanical power, about half was accounted for by transport. Sir John Hacking quoted nine million tons of coal as the estimated annual saving if the railways were completely electrified. His review of the fuel position in relation to future demands led to an estimate of the possibilities of consuming natural uranium, of which there were world reserves many times greater than known reserves of coal and oil, and Sir John Hacking said he fully expected that in the near future this country would go ahead

with plans to consume natural uranium on a scale which would make a significant contribution to electric energy supplies 15 or 20 years hence. Meanwhile better use of existing fuels continues to be studied, and the British coal-burning gas turbine locomotive now under development will provide timely data in this respect.

Loudspeaker Diction

INTELLIGIBILITY of loudspeaker announcements is a subject frequently discussed among travellers. Few people are disposed to accept the fact that their own diction lacks something in clarity, and this characteristic is shared by announcers as well as their critics. Where there is room for improvement, it is better to demonstrate the fact than merely to suggest it, however tactfully. A method used successfully by British Railways is to take tape recordings of loudspeaker announcements as they are heard on the platforms, and then to play them back to the announcers concerned. It is found that the subjects of this experiment recognise shortcomings as readily as any of their hearers and are eager to improve themselves. They then attend classes organised by a qualified elocutionist, where faults in voice production are corrected without sacrificing personality. Experience has shown that this is a better method than an initial elocution course because of the receptive attitude created by the demonstration with the tape recorder. This is a valuable development and one that, if extended, deserves to be supported by the closest attention to ensuring liaison between announcers and operating staff, so that instructions heard with clarity may be acted on with confidence.

April Operating Results

DURING the four weeks to April 19 British Railways originated 21,898,000 tons of freight train traffic, 760,000 tons, or 3·6 per cent, more than in 1952 but 72,000 tons below 1951. The volume of mineral and coal class traffic was a record for April since nationalisation. Merchandise carryings continued to decline, though at a rate of 3·2 per cent compared with 8 per cent in the first 12 weeks of this year. The merchandise tonnage of 3,653,000 was 122,000 tons below April, 1952, and no less than 511,000 tons below 1951. The other forms of State-owned transport are not retaining high-class traffic. British Road Services hauled only 3,002,000 tons in April, 183,000 tons less than last year (5·7 per cent) and Inland Waterways lost 53,000 tons of general merchandise (15·6 per cent).

Unfortunately many traders share the opinion expressed recently by the Chairman of Cerebos Limited that the services furnished by nationalised transport are unsatisfactory and expensive. Since Cerebos salt was first put on the market, its manufacturers have sent much valuable traffic by rail, and it is a pity that the firm has decided to distribute its products in future by "trunk" road services between its factories and depots in large towns. By keeping its goods under its own control from the works to the customer, the company hopes to hasten delivery and reduce the cost of distribution. It was noticeable that in making his declaration about a new transport policy, the Chairman of Cerebos Limited had not a word to say about consultation with British Railways.

The April figures show how quickly any improvement in coal mining and other heavy industries affects railway and dock activities. During the first 20 weeks of this year the output of coal, both mined and opencast, was 90,543,000 tons, an increase on 1952 of 950,000 tons, or one per cent. Inland coal consumption rose by over 1,500,000 tons, or 1·8 per cent, and shipments for export or bunkers by 1,200,000, or nearly 24 per cent. These changes in the production and distribution of coal enabled British Railways to load 55,572,000 tons of coal and coke in the 16 weeks to April 19, an increase of 2,156,000 tons (4 per cent) on the corresponding weeks of 1952. In the same period, B.T.C. docks and wharves shipped 9,205,000 tons of coal, coke and patent fuel, 748,000 tons (8·8 per cent) more than a year ago.

Similarly, the April mineral statistics reflect the busy state of the iron and steel, engineering and shipbuilding industries. The mineral tonnage of 4,948,000 was 403,000 tons (8·9 per cent) above 1952. The number of wagons forwarded with an average load of 11·6 mineral tons was 452,000, an increase of 31,000; some 9,000 of these additional wagons began their transits in the Southern Region, which does not originate much mineral traffic as a general rule.

Operating Statistics

The average length of haul for merchandise lengthened by three miles to 132, but both minerals and coal were led for slightly shorter distances of 79 and 56 miles, respectively. Net ton-miles in April for all traffic were 2·8 per cent above 1952, but nearly 2 per cent below 1951. The number of freight train miles worked, 10,579,000, was 122,000 (1·2 per cent) more than in 1952 and 305,000 (2·8 per cent) less than in 1951; the proportion of empty to loaded train mileage was exceptionally high this year. Freight train speed rose slightly, to 8·75 m.p.h. The North Eastern Region reached a speed of 11 miles an hour a month earlier than last year, the Scottish Region coming close with a return of 10·5 m.p.h. In coping with an increase of 43,000, or 21·5 per cent, in empty train miles, the Eastern Region reduced its speed from 8·9 to 8·84 m.p.h. Because of increases of 6·4 per cent in ton mileage, 3·1 per cent in loaded train miles and 9·6 per cent in empty train miles, the Western Region rate of movement was slowed down from 8·96 to 8·65 m.p.h., somewhat below the all-line average but more than a mile an hour ahead of the London Midland Region speed of 7·59 m.p.h.

The output of net ton-miles in a train engine hour increased by 24 to 1,176, the highest level since June, 1952. The improvement was due largely to returns of 1,506 from the North Eastern and 1,281 from the Eastern Region, though the London Midland raised its figure by 49 to 1,148. The Western Region output has been lower in every period this year; in April it fell by 13 points to 1,131. The trend of wagon mile statistics changed abruptly in April, when an increase of 6,540,000 (2 per cent) cancelled a decrease of 4,916,000 in the 12 weeks to March 22. Unluckily the increase represented only 1,906,000 additional loaded wagon miles (0·8 per cent), the balance of 4,634,000 being empty wagon miles—an increase of 4·8 per cent in mileage earning no revenue directly. By working 232 wagon miles in a train engine hour, British Railways set up a record for the April period since nationalisation, thanks to returns from the North Eastern and Eastern Regions which compared favourably with prewar performance. In contrast, the Western Region statistic slipped back by six points to the low level of 215 wagon miles per train engine hour. That was a regrettable lapse at a time when the prompt turnround of wagons is important. About 6,000 fewer wagons were available for traffic in April than in January owing to the number under repair increasing to 81,300, or 7·2 per cent of the total stock.

Passenger Traffic

In the month of March British Railways originated 77,039,000 passenger journeys, 1,543,000 fewer than in 1952 (2 per cent). The number of passengers carried in the first quarter of the year was 227,489,000, a decrease of 11,145,000 (4·7 per cent). The Southern Region lost 5,212,000 passengers (5·3 per cent) and the London Midland 3,179,000 (6·1 per cent). First class travel accounted for no more than 4,917,000 journeys during the three months, a shrinkage of 734,000 journeys, or 13 per cent. The Southern Region share of this serious loss was 220,000 (14 per cent) and the London Midland issued 214,000 fewer first class tickets (10·8 per cent).

In the four weeks to April 19 London Transport carried more people for lower takings than it earned a year ago. The number of railway passengers was 43,422,000, a decrease of 247,000 (0·6 per cent). Road vehicles conveyed 277,793,000 passengers, an increase of 453,000 (0·1 per cent). Total carryings were thus 321,215,000, a small increase of 206,000, or less than 0·1 per cent. The average receipt per journey, however, was only 7·04d. by rail against 7·33d. a year ago and 3·19d. by road against 3·27d.

The result was a decrease in London Transport revenue of £153,000 or 2·9 per cent, but expenses were reduced by cutting out 734,000 rail car miles (4·4 per cent) and 512,000 road car miles (1·5 per cent). Road Passenger Transport, on the other hand, ran 41,000 more car miles (0·1 per cent) and carried 663,000 more passengers (0·4 per cent). With an average receipt per journey of 4·8d. against 4·6d., these Provincial and Scottish services earned additional revenue to the amount of £155,000 (4·6 per cent). A comparison of the results of these two undertakings emphasises the exceptional difficulties which beset the conduct of passenger services in and around London.

Summer Services on the Netherlands Railways

THE summer timetable of the Netherlands Railways introduced on May 17 shows significant improvements in both international and internal services. The completion of electrification between Zutphen and Zwolle line, referred to elsewhere in this issue, has brought the important north-south artery between Nijmegen and Zutphen into the general system of scientifically scheduled electric and diesel-electric regular-interval services which have now become a characteristic feature of the Netherlands system.

An hourly service of electric all-stations trains has been provided between Zwolle and Nijmegen. Northbound trains have regular booked connections at Nijmegen with diesel-electric trains from Flushing and s'Hertogenbosch; at Zutphen either (every two hours) with a new fast diesel-electric service to Hengelo, or (every other hour) with the diesel-electric service to and from Apeldoorn and Winterswijk; at Deventer with the electric service from Amersfoort-Apeldoorn and Enschede-Almelo; and at Zwolle with the electric trains to Leeuwarden and Groningen; some of the trains from Nijmegen run through to Groningen.

The all-station trains between Nijmegen and Zwolle, which are formed of two-car units, take only five min. longer than the steam express trains which used to call at the principal stations only. The express service, now performed by locomotive-hauled electric trains, is now confined to three peak-hour trains a day each way, calling only at Arnhem, Dieren, Doesburg, Zutphen and Deventer. Between Arnhem and Deventer, the hourly interval is reduced to 30 min. by interworking with another hourly all-stations service which runs on weekdays between 7.30 a.m. and 7.30 p.m. At alternate hours, these trains are extended from Arnhem *via* Ede-Wageningen to Amersfoort.

The principal improvement in the diesel-electric services is a new two-hourly through service between Roermond and Enschede *via* Nijmegen, Arnhem, Zutphen, and Hengelo. These trains call only at Arnhem between Nijmegen and Zutphen and provide useful two-way connections with the electric services at Zutphen. The intervals between Zutphen and Enschede are reduced to one hour by interworking with another two-hourly service. One of the incidental advantages of this new service is a drastic reduction, from 50 to five min., of the waiting time at Nijmegen for connections between Roermond and Hengelo/Enschede. This advantage has been obtained at the price of a slight increase in connection times between the Flushing-Nijmegen trains and Hengelo/Enschede, but this is counterbalanced by the fast run between Nijmegen and Zutphen.

Further new diesel-electric stock is due to be delivered by Allan N.V., Rotterdam, and will probably form four single railcars and one two-car set. The latter will be put into service between Dordrecht and Tiel to augment the diesel-electric and steam services already serving that line. Of the four railcars, one is to replace a diesel-mechanical car on the Gouda-Alphen line, two will serve the Arnhem-Winterswijk line, and one will run between Leeuwarden and Sneek, interworking with steam trains.

As far as the existing electric services are concerned, there is little alteration on the main Amsterdam-The Hague-Delft-Rotterdam line, except that a few trains have been added between The Hague and Leiden on weekdays. A new (third) platform has been brought into use at Haarlem. On the Rotterdam-The Hague line *via* Berkel, there has been a seasonal increase in the service on weekday evenings. The local service between Rotterdam and Maassluis (Hook of Holland) has been improved to the limited extent permitted by the bottleneck at Schiedam. The through Amsterdam-Rotterdam-Breda-Eindhoven trains have been speeded up by a few minutes, which have allowed a train set to be saved at Eindhoven. On the line from Utrecht *via* Gouda to The Hague and Rotterdam the coupling-up procedure at Gouda has been modified so that a few minutes are gained by the Rotterdam portion at the expense of the portion from The Hague. The hourly electric service between Utrecht and Leiden has been recast to give improved connections at Utrecht with the electric services to and from the east and north, and at Alphen with the diesel-electric trains to and from Gouda. For similar reasons, the timings of the hourly service Utrecht-Den Dolder-Baarn have been altered. The Amsterdam-Utrecht service has been increased on weekdays to a 30 min. interval. The three daily locomotive-hauled electric express trains from Amsterdam which used to divide at Sittard for Maastricht and Heerlen now run through to Maastricht only with interchange connection to and from Heerlen, thus saving time and economising on locomotive working.

Diesel-electric services have also been improved between Amsterdam and Enkuizen, and Staveren and Leeuwarden (there is steamer connection between Enkhuizen and Staveren), and between Alkmaar and Den Helder, connecting with the Amsterdam-Alkmaar electric services. On the Dordrecht-Gorinchem line, the service has been increased from eleven to 19 trains a day each way, including twelve diesel-electrics.

An important development is the inauguration, also on May 17, of the new junction line between Nieuwerkerk and Rotterdam North, part of the scheme for diverting all trains from Rotterdam Maas to the new Rotterdam Central Station. As a first step, all goods trains and a limited number of passenger trains have been diverted to Rotterdam North, namely all Hook of Holland boat trains *via* Utrecht (including the B.A.O.R. leave trains) and some trains between Rotterdam and Amsterdam *via* Gouda.

By agreement between the European railway administrations, the Netherlands Railways public timetable has been slightly increased in size to conform to international standards. The route numbering has been modified so that, as in the Swiss timetable, the principal routes carry numbers ending with 0, and their branch lines the numbers that follow.

Italian Luxury Electric Trains

THE novelties in the new 3,000-h.p. seven-car electric trains of the Italian State Railways are not so numerous or so vital as the amount of general press publicity would have us believe. They are mainly in interior decoration and seating equipment. The most important points about the two trains, which have not been sufficiently stressed, are: (*a*) that they are purely *de luxe* sets and that in the endeavours to give such a standard the interior has become dangerously near flamboyant; and (*b*) that only four cars out of the seven are revenue-earning. Even for *de luxe* trains this is a very low proportion and brings electric traction back on a par with steam-hauled trains, where, for example, on the "Queen of Scots" Pullman about two-thirds of the total locomotive-plus-train weight is revenue-earning. In these Italian trains the empty weight is almost exactly two tons per revenue-earning seat. Presumably there is enough moneyed traffic offering in Italy for these supplementary-fare trains to be consistently filled to capacity; they will need to be if they are to pay, particularly as there is only a tri-weekly service in each direction—Milan-Naples on Monday, Wednesday and Friday, and Naples-Milan on Tuesday, Thursday and Saturday. That is, one set must be considered as standing spare.

For the present these two trains are operating a service supplementary to that of the three-car *elettrotreni* which

have been running for years with success, even though not always filled to capacity. Fortunately the new trains are not being run at the speeds claimed in the general press. If they were, they would add further to the true cost of their operation by disorganisation of preceding and following services, much as super-speed trains do anywhere when inserted in the daily procession of much slower trains. Timings on the south-bound journey from Milan are 113 min. to Bologna (136 miles); 182 min. to Florence (196 miles); 390 min. to Rome (393 miles); 530 min. to Naples (524 miles). Northbound the Naples-Milan time is 535 min. Typical existing times southbound are 120 min. Milan to Bologna with an intermediate stop at Piacenza; 193 min. to Florence; 395 min. to Rome; and 545 min. to Naples.

In the details of construction and equipment, described on other pages, railway and builder have kept to most modern practice, particularly in the complete nature and ample capacity of the air-conditioning arrangements, and in the sound and heat insulation. Moreover, the power provided is adequate for even faster schedules than those noted above to be kept over the Apennine main line, the continuous traction motor rating being equal to 7 h.p. per ton of fully-laden train weight. What the train crew numbers we do not know, but there must be at least 14 in the personnel, and the wages of these employees will not only require a regularly high loading factor but also that the passengers spend a good deal of money *en route* on meals, drinks and so forth. As a prestige effort, trains and service are splendid; but if financial profits are expected it is to be hoped that most of the *gran tourismo* traffic in these trains will be composed of Americans and Swiss, the only people today who have sufficient money in the hands of sufficient numbers to make real *de luxe* pay.

Victorian Railways

THE report for the year ended June 30, 1952, of the Victorian Railways, which has been sent us by Mr. R. G. Wishart, Chairman of the Victorian Railways Commissioners, states that at the beginning of the year the severe restrictions in train services which were introduced in February, 1951, because of inability to obtain sufficient coal, were mostly still in force. Although coal supplies subsequently improved and enabled some restorations of service to be made, a deterioration in the staff position, combined with the limitation on the working of overtime imposed by the railway trades unions.

Despite this a heavy passenger and a record goods business were handled, the goods ton mileage exceeding that of the previous record year (1949-50) by 6 per cent. This additional traffic was handled with 3 per cent less train mileage. The average train load, the tonnage per wagon mile, and the payload per goods train-mile were all greater, while the ratio of empty wagon mileage to total wagon mileage was lower than in the earlier year. During the ten-week period of the harvest, nearly 500,000 tons of wheat were transported by rail; the tonnage of superphosphate also approximated 500,000; and a new record was established for the railing of fuel, 1,750,139 tons of black and brown coal and coke having been moved, against 1,251,223 in 1949-50, the previous record.

The following are some of the principal results:—

	1950-51	1951-52
Average miles of line	4,687	4,687
Train-miles	14,574,809	16,972,801
Passenger journeys	141,312,589	165,130,762
Goods and livestock, tons	7,539,166	9,125,140
	£	£
Passenger, parcels, etc., revenue ...	7,225,034	9,110,998
Goods and livestock, revenue ...	9,992,509	13,461,991
Total earnings	20,446,260	26,089,432
Working expenses	20,810,733	29,611,867
Net earnings	−364,473	−3,522,435

In handling the heavy tonnages in the difficult conditions prevailing, they were aided materially by the substantial additions made to rolling stock during the year. Of the large amount of new equipment on order from contractors delivery had been obtained at June 30 last of 124 locomotives and 1,825 wagons. A marked improvement in passenger service was made on certain country lines by the use of additional diesel railcars, 31 of the 39 on order having been delivered at the close of the year. A further stage in the scheme for the improvement of the standard of accommodation on the "Overland" express between Melbourne and Adelaide was reached with the introduction of a new type of air-conditioned sitting car, besides the roomette and twinette sleeping cars.

Substantial additional revenue was obtained from increased traffic and from the higher fares and freights operative from October 1, 1951; but heavy costs arising from the pronounced upward trend in wages and prices of materials again resulted in a heavy deficit. The effect of these uncontrollable costs on the financial results of operating the railways is illustrated by the fact that in the year under review, compared with 1946-47, increased expenditure arising from quarterly adjustments in the basic wage, the 40-hour week, and other awards amounted to more than £10 million, while the increased cost of materials, including coal and oil, added another £4½ million. These increases, with another £1 million for payroll tax, pensions, and long service leave, totalled £15½ million. The reduced loan funds allotted for railway purposes during the year had seriously affected plans for the expansion and rehabilitation, and many urgent and important works had to be deferred. The report draws attention to an even worse position for the current year, the original programme involving a capital expenditure of £12·5 million having been reduced to £6·8 million.

The Commissioners point out that the effect of curtailing the works programme will be to retard the planned expansion of railway capacity to meet developmental needs, and to keep in service, at excessive maintenance costs, rolling stock long since overdue for replacement. It will also be impracticable for the present to proceed with plans for converting engines to burn pulverised brown coal, with consequent delay in eliminating dependence on imported black coal and securing greater efficiency of operation.

In the last report it was stated that it had been decided to convert the imported "N" class engines to oil burning and to also arrange for the 60 "J" class engines under construction in Great Britain to be built as oil burners; but the huge increase in the cost of fuel oil from £9 to over £22 per ton which occurred in the latter half of the year, and the much brighter outlook for black coal supplies, have led to abandonment of the proposed conversion of the "N" class locomotives, and "J" class locomotives are to be constructed as coal instead of oil burners.

The report expresses the hope that delivery of the 25 electric locomotives on order from the English Electric Co. Ltd. for the Gippsland line will be completed in the second half of 1954. Unsuccessful attempts were made to delay delivery to accord with the retarded progress of the electrification work seriously affected by restricted loan funds available, so that there may be relatively little work available for these locomotives for some time after arrival.

Representations were made in November, 1952, to the Government of Victoria on the position which is developing in connection with the Melbourne suburban passenger rolling stock. It was explained that, on electrification in 1919-23, the rolling stock included many swing-door units used in steam services, already many years old, and reconditioned for electric traction. Since 1927 the only new stock constructed has been six trains in 1944-51. The present electric stock consists of 890 cars, and at June 30 last, 323 of them were over 40 and 176 of that number were over 60 years old. Not only is the age and poor condition of the carriages involving excessive maintenance costs but the condition of the electrical equipment is becoming a problem. In addition, the Commissioners urge that provision should be made to meet the growing traffic and for improved services, particularly to outer suburbs. As shortage of staff and materials would preclude the number of trains needed being constructed in departmental workshops in the time required, Government approval was sought for purchase of 50 trains under contract. The Government approved in January, 1952, of 30 trains (210 coaches) being purchased and deferred the balance for consideration at a later date.

LETTERS TO THE EDITOR

(The Editor is not responsible for opinions of correspondents)

Availability of Season Tickets

June 5

SIR,—I heartily concur with Mr. S. E. Lord's letter in your June 5 issue.

An even bigger anomaly is where a route is duplicated, such as from Finsbury Park to Kings Cross. Season tickets are only available from stations north of Finsbury Park to Kings Cross *either* by Eastern Region steam trains *or* Underground, between Finsbury Park and Kings Cross, but whichever route is selected means that the ticket cannot be used on the alternative route between these two stations. I believe the tickets used to be available for both routes, so perhaps the Railway Executive will explain why this privilege, very useful in certain rush hours and at holiday periods, was withdrawn, and if it can be reinstated.

Yours faithfully,

L. G. JENNINGS

3, Calder Avenue, Brookmans Park, Herts

Summer Timetables

June 5

SIR,—I have read with considerable interest in today's issue the letter from my namesake on summer timetables.

I fully appreciate the operating difficulties at busy stations, particularly at week-ends. I realised this only too well during my experiences during the last war, but I still maintain that there is considerable room for improvement, with a little more planning and forethought.

I quote one more example from the Midland section of the London Midland Region. If one wishes to travel from Bedford to Leicester, it is impossible to reach the latter city on weekdays until 10.33 a.m., and then only by leaving Bedford at 8.28 a.m., changing at Wellingborough, and waiting 35 min. At that cold and draughty station there is no refreshment room except the small unlicensed establishment out in the station yard.

Yours faithfully,

H. W. FRANKLIN

"Greenways," Northampton Lane South,
Moulton, Northants.

May 28

SIR,—May I join issue with your correspondent, Mr. H. W. Franklin, on the above subject. I think that in his letter in your May 22 issue he is less than just in his appraisal of the improvements which have taken place, but, on the other hand, far from it being the Southern Region which caters best for travellers not going to or from London, I have always thought that the other regions were always better in that respect. Especially is this true of boat trains. For example, apart from the boat trains from London, the London Midland Region provides trains from Manchester and Birmingham to Holyhead, Manchester and Leeds to Heysham, and from Glasgow and Newcastle to Stranraer. The Eastern Region provides a boat train from Liverpool to Harwich *via* Manchester and Sheffield. By contrast, the Southern Region provides boat trains only from London to its ports, with the exception that local trains do call at Newhaven Harbour station, and although the Waterloo to Southampton Docks boat trains mostly call at Basingstoke and Winchester, no mention is made in any publication except that Basingstoke is shown in the Channel Islands services leaflets.

The real reforms, however, are required not so much in the train services provided, which compare well with those in most other countries, taken as a whole, but in the presentation of the information provided. Not only is it about time that British Railways provided maps with table numbers so that one may quickly find the service required (the L.N.E.R. map was the best in this respect), but it is also time that the standard international signs for sleeping cars, buffet cars, "stops to pick up only," and so on, were adopted. We could also do with numbers to trains so that a train may be easily found in a different table and lists of through carriages under each number can be provided.

Perhaps also the Railway Executive can tell us why all restaurant and buffet cars have now become "refreshment" cars, so that unless one has access to a working timetable one has no idea of what is to be provided, and also why, when a line is served by the trains of two regions, only its own trains are shown in each region's timetable. For example, between Weymouth and Monkton & Came Halt, the Southern Region trains to and from Dorchester South share the same metals as Western Region trains to and from Dorchester West, but no mention is made in either regional book that "other trains between Dorchester and Weymouth are shown in Table 62 of the Western Region timetable" (or Table 45 of the Southern, as the case may be).

Yours faithfully,

G. A. HAFTER

107, Mortlake Road, Kew

Railway Reorganisation

May 28

SIR,—I remember how, in 1922, we on the old South Eastern & Chatham hated the merger into the Southern, and how we detested "South-Westernisation." My father before me had regarded the combination of the South Eastern with the Chatham with equal horror. For years we viewed the Brighton man as slightly our intellectual inferior, and his promotion was not, of course, on merit, but obviously engineered by a Brighton man in high places looking after his own.

In due course the wounds healed and we all became Southern (with some throw-backs), proud of its services, its great electrification, its new engines, and its great link with the Continent. Private ownership had little do do with it. Much of it stemmed from the genius and ability of the late Sir Herbert Walker as a leader of men, and the enthusiastic band under him able to pursue their tasks untrammelled and in comparative peace.

Given that peace the British Railwayman would have developed the same pride in his combined railways. It takes some time to realise that with an impoverished common till, that looked-for electrification, that new lock at Dover, must take second place in the need for doubling the tracks within the great industrial areas of the Midlands and North the better to serve the common weal.

The Railway Executive was on the way to achieving its own salvation, and would have taken the best from all the Regional methods. Those who imagine that enterprise is only that when preceded by the magic word "private" are doing the members of the Executive an injustice. With the lifeblood of transport in their veins, they did not and could not develop overnight into inept and incapable morons. In these days of enlightened joint consultation, one hopes that they themselves might be fully consulted how best the industry can be run.

The unfortunate experts who find themselves handicapped by continually being in the front of political turmoil can hardly regard the future with happiness. With the world's greatest railway network in their hands, with some progress made towards cohesion, they are cast in the cockpit again, to be criticised by the laity, the onwatchers, the theorists, the politicians, and worst of all, their proprietors, the general public. For men with the spirit of service, it is too much. Theirs is the knowledge, experience and ability, based on practice and not theory. How shall their capabilities be fully employed to best advantage? Or doesn't that matter?

Yours faithfully,

SOUTH EASTERN & CHATHAM

THE SCRAP HEAP

By the People, for the People

According to a Bombay press report dated April 8, Mr. Lal Bahadur Shastri, Union Minister for Railways, speaking at Kapadwanj, suggested that the people themselves should come forward to build platforms and goods sheds and thereby quicken the development plan of the railways.—*From "The Indian Railway Gazette."*

Community Water Supply by Rail

Though the conveyance of community water supplies by rail is fairly frequent in countries with a dry climate, it is rare in Britain. A correspondent, however, points out that this is the normal method of supply at Padeswood in Flintshire, which has no source of water of its own, not even a well. The three local water undertakings pass the fringe of the village. The railway brings water in cans for the inhabitants by daily service from Mold. Padeswood & Buckley Station is on the Chester to Mold branch of the London Midland Region.

Offensive Lion

Couldn't we, by a supreme effort of the national will, do something about that minor but permanent crime against good taste, the British Railways lion? I know of nothing that can be said in defence of this odious vermivore (for such the creature would appear to be) Equally offensive to heralds, to naturalists and even to patriots, the animal contrives to appear at once jaunty and *chétif;* every time I see him flexing his cow hocks on a railway engine, I think for some reason of Dr. Dalton, of potato-rationing, of the Common Man. Is it too late to consider replacing by some worthier emblem a design which would barely pass muster on the label of a bottle of Old Scotch Whisky distilled in Japan and peddled round Papua in a pearler?—*"Strix" in "The Spectator."*

History in Buttons

An African messenger employed by the Chief Mechanical Engineer's Department on the Rhodesia Railways possesses a jacket held together by three buttons—buttons that afford one a glimpse of railway history. The top button is one issued by the old London & South Western Railway, the second by the Cape Government Railways, and the third by the Beira & Mashopaland Railways.—*From the "Rhodesia Railways Magazine."*

Fare's Fair

If it is conceded—and I think it will be—that Coronation visitors have found a very real improvement in the food and surroundings of our railway refreshment rooms, then much of the credit must go to a woman. Mrs. Ella Gasking is the only woman member of the British Transport Commission's Hotels Executive. . . . Of course one would not travel on British Railways to eat, as they do in some districts of France, but against that should be set the fact that the cup of tea and sandwich, if obtainable at all, would cost four times as much on the French as on the English railway station. And of course our railway gastronomy has still a great deal of progress to make; Mrs. Gasking is the first to admit it. "But give us another two years," she says, "and I believe you'll find the food in our refreshment rooms very nice indeed."—*From "A Woman's Viewpoint" in "The Observer."*

Continental Advertising at Victoria

The Continental atmosphere at Victoria, terminus of the Southern Region routes to France and Belgium and beyond *via* Boulogne, Calais, Newhaven, and Ostend, is enhanced by two Continental type poster sites erected by the Southern Region Publicity Department, of a type long familiar in the Paris boulevards. One of these, illustrated above, is in the forecourt and the other in the Eastern Section circulating area near the departure and arrival platforms of the "Golden Arrow" and other boat expresses.

Continental type poster site in the forecourt of Victoria Station

Before Time

On this first day (June 8) of summer timetables I went to Liverpool Street station this morning to meet the train which left Cambridge at 10.4 The train was due at 11.24. It came in at 11.18.—*From "The Londoner's Diary" in the "Evening Standard."*

Fresh Milk Line

A New Jersey dairy farmer who built a passenger-carrying model railway on his land as a hobby, has found that by giving rides to the public it has become an unusual means of promoting the consumption of milk. The railway is called the Centerville & Southwestern, or "The Fresh Milk Line" and its principal trains are hauled by a 19-ft. 4-8-4 steam locomotive, which has been described in *Wheels,* journal of the American Car & Foundry Company, as "possibly the most authentic 'little' locomotive in existence."

Kent Coast Visitor

Photo] [*P. Ransome-Wallis*

An Eastern Region "B1" from York shed, on loan to the Southern Region, leaving Herne Bay for Victoria during the period when the "Merchant Navy" Pacifics were withdrawn for crank axle examination

OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

RHODESIA

Royal Train

The Royal Train to be used for the tour of Queen Elizabeth the Queen Mother and Princess Margaret will consist of 14 vehicles, eleven of them Rhodesia Railways stock and three air-conditioned coaches and a van lent by the South African Railways. Two of the S.A.R. vehicles formed part of the Royal Train during the Royal tour of Southern Africa in 1947; in these are the Royal staterooms, and sleeping and office accommodation for the entourage. The third S.A.R. coach will serve as a day coach and dining room for the Royal party. A twin dining-car will cater for the staff.

The Rhodesian coaches will be standard R.R. all-steel vehicles, repainted to match the ivory livery of the S.A.R. Royal vehicles. A 50-line automatic telephone exchange is being installed in the train. A pilot train, consisting of ten R.R. all-steel coaches and refrigerator van, will precede the Royal train by 30 min.

INDIA

Exhibition Trains

The more important of the exhibits which were shown at the Centenary Exhibition in New Delhi are to tour the country in two trains, one broad- and the other metre-gauge, due to leave Delhi about the middle of this month.

According to a programme arranged by the Central Railway the broad-gauge train will be at Gwalior on June 16-17, Saugor on June 21, Bhopal on June 22-23, Itarsi on June 24, Jubbulpore on June 25-28, Akola on July 2, and Nagpur on July 5-8. From Nagpur the train will run *via* Kazipet to Hyderabad, reached on July 11. It will be at Poona from July 17 to 21 and arrive at Bombay on July 23. It will then continue over the Western, Northern, Eastern and Southern Railways, completing its tour by the end of November.

The metre-gauge train will start on the North Eastern Railway and travel over the Western, Central and Southern Railways. It will be transferred from Khandwa (Western Railway) to Manmad (Central Railway) and after traversing metre-gauge sections of the Central Railway will be handed over to the Southern at Dronachellam.

On the exhibition site it is proposed to establish a permanent railway museum similar to the British Railways Museum at York.

NEW ZEALAND

Increased Haulage

During the 52 weeks ended January 3 the railways carried 10,150,000 tons of revenue-earning goods and livestock an average distance of 170 miles a ton. This compared with 10,020,000 tons hauled an average distance of 104 miles in 1950, the previous best calendar year.

Increasing efficiency in operation is shown by the fact that the record haulage effort in 1952 was achieved with fewer train miles and fewer train hours than in 1950. The total goods and mixed train miles, for example, decreased from 9,940,000 in 1950 to 9,600,000 in 1952.

Rise in Fares and Rates

Suburban fares will be increased by ten per cent on June 21, when increases in freight charges ranging from five to 25 per cent will also come into force for various classes of commodities. The new scale is expected to bring in £1,000,000 in a full year. For the remaining nine months of the current financial year there will be an estimated net revenue gain of about £800,000. An early application is to be made for an increase in fares on railway bus services.

Railway revenue for the 1952-53 financial year totalled £26,607,937 and expenditure, including interest, £29,648,101, making an overall loss of £3,040,164. The Commission points out that even if interest was disregarded the net revenue was only £83,272, a very small contribution toward interest on the capital invested. The Railway Commission's announcement says that the decision to increase the charges for certain items followed the examination of finances which it made immediately it took office. It recommended no more than the minimum increases necessary. There was no spectacular way to cut costs or increase revenue and deficits were inevitable unless increasing costs were absorbed into railway charges in sufficient time to offset additional expenditure.

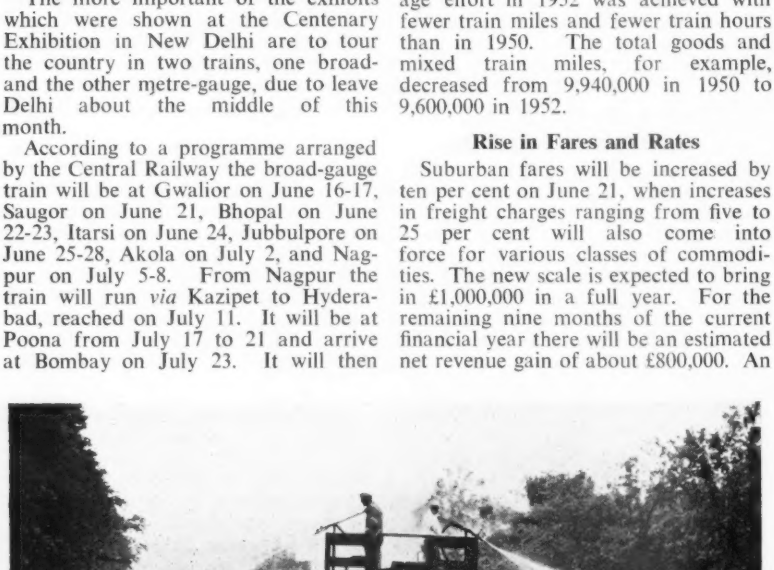
CANADA

Weed Killing on C.N.R.

The C.N.R. now has more than ten weed-spraying trains operating. Two operations are involved. One is killing weeds which, by holding moisture in the ballast, cause the sleepers to rot. The other is killing the brush which grows alongside the track, and so helping to keep snow off the track in winter, giving better visibility at level crossings, eliminating interference with communications wires and reducing the risk of fire.

The weed-killing cars, which are operated in trains carrying supplies and providing sleeping and messing accommodations for the crews, spray a 100-foot swath, travel at six m.p.h. and cover up to 40 miles a day. This summer nearly 10,000 miles will be covered in the largest campaign which the company has undertaken since it operated the first spray train in 1927.

Results of the weed and brush control methods are exchanged with chemical research organisations in Canada and the United States so that any new developments can be put to general use. The chemicals used are harmless to animals.



Spraying the vegetation growing alongside a Canadian National Railways line

UNITED STATES

Santa Fe Access to Dallas

The Atchison Topeka & Santa Fe has under serious consideration a scheme which would shorten its approach to the city of Dallas, Texas, by nearly 30 miles. At present the only Santa Fe access to Dallas is by its north-south main line to Fort Worth, and then eastwards for 31 miles. The proposed scheme is for a new line, 38 miles long, diverging from the north-south line at Sanger, 46 miles north of Fort Worth, and proceeding south-east to join the St. Louis-Southwestern line at Addison; thence running powers would be sought over that line for 13 miles into

Dallas. Trains from the north would thus require to divide into their Fort Worth (and Galveston) and Dallas sections at Sanger or some point north of the junction. A contract is now being drafted between the two railways for joint use of the St. Louis-Southwestern tracks between Addison and Dallas, and if this is agreed to by the Interstate Commerce Commission, the Santa Fe will apply for authority to build the 38 miles of new line.

New York Central Diesel Order

Orders have been placed by the New York Central System for 164 diesel-electric units, at a total cost of $27,500,000, which when delivered will make possible the complete dieselisation of all New York Central operation east of Cleveland and all passenger operation east of Detroit. Also, on delivery of the units next autumn, the New York Central will become the biggest diesel owner in the U.S.A., with 2,113 units of 2,758,900 total h.p., representing the dieselisation of roughly two-thirds of the large system. Of the units now on order, 34 will be of 2,250 h.p., for passenger service, 96 will be combined road-shunters of 1,600 or 1,500 h.p., and 35 will be yard-shunters of 1,000 h.p.

FRANCE

Basle-Calais Express Derailed

Three passengers were slightly injured when an express from Basle to Calais was derailed on May 25 at 2.12 p.m. at a level crossing near Renescure on the border between the Nord and the Pas-de-Calais departments. The train was running at 65 m.p.h. when the fourth coach broke a coupling and left the rails. The locomotive with three coaches ran on for several hundred metres. The remaining six coaches ploughed up the ballast and rails for more than 200 m. before coming to a standstill all upright. The all-steel coaches resisted the shock and were not telescoped.

The injured passengers after preliminary treatment, were conveyed to their homes. Other passengers were transferred to the first three coaches and continued their journey to Calais. The cause of the derailment was not apparent but it is stated that it was not caused by excessive expansion of the rails by heat, as was at first supposed.

Strikes in South and West

Strikes were renewed mainly in the Mediterranean, South Western and Western regions on May 27. Paris main line and suburban services were not affected. The non-Communist railwaymen's federations had called off the 24-hr. strike previously announced for May 27 after signing an agreement with the S.N.C.F. providing for productivity payments to railway workers, equivalent, it was calculated by one of the federations, to four per cent of the wages or fr. 1,000 a month to the lowest-paid grades. The Communist-led General Confederation of Labour was not a party to the agreement and supported the proposal for a 24-hr. strike on May 27.

When the strike was renewed in the principal towns of the south and west, railway officials suppressed some of the slow local trains to ensure the running of the main-line expresses. At Marseilles the Paris-Vintimille express was held up in the station and passengers were conveyed to their destinations by other means. The "Blue Train" and "Cote d'Azur" trains left for Paris on time, but other expresses were delayed. At both Marseilles and Nice, it was stated, 80 per cent of the railwaymen were on strike, and at Toulon the strike was total. Trains were delayed at some small towns in the south-west and west, but the situation was reported normal at Toulouse, Bordeaux, Rennes, Rouen and Havre.

Whitsun Traffic

Although the weather was fine during the Whitsun holidays the number of passengers leaving the Paris terminal stations was less than at Whitsun last year. Figures issued by the S.N.C.F. show that on the three days May 22, 23 and 24, a total of 343,600 Parisians left the capital. This number compares with 437,000 on May 30, 31, and June 1, 1952. The decline this year was thus about 21 per cent. All regions were similarly affected.

Traffic included 391 regular and 174 extra trains this year; in 1952 the numbers were 374 and 240. The decrease in the number of trains was thus 49. Among the reasons given for the decline in traffic was the unusual number of holidays in May, the month comprising only 17 working days and the approach of the summer holidays, leading many people to abandon railway travel at Whitsun. Further, the railway strike at the Gare de Lyon on the Friday and Saturday before Whitsunday and also at certain railway centres in the South Eastern Region caused others to remain in Paris. The S.N.C.F. statement did not mention the recent rise of 25 per cent in railway fares, which may have been another factor in the decline.

NETHERLANDS

Goods Traffic Through Rotterdam

Collaboration between the Netherlands Railways and German Federal Railway has reduced since early 1952 the travelling time of wagon loads between Rotterdam and Western German destinations. In October, 1952, fast goods trains began to run between Rotterdam and Italy *via* Western Germany and Switzerland on substantially reduced timings—Milan and Rotterdam South 30 hr. compared with 47 hr., and Zurich and Rotterdam South 33 hr. (40 hr.), and Basle and Rotterdam South 16 hr. (30 hr.). Some three weeks later fast goods trains in the reverse direction, with similarly reduced travelling times were instituted. Since May, 1953, these fast goods trains, travelling at an average speed of 52¾ m.p.h., connect with similar fast goods trains operating to and from Prague, Vienna, Munich and Nuremberg, and it is intended to extend further these fast connections.

These notable reductions in travelling times have been facilitated by the elimination on the Netherlands Railways of night passenger services to free the lines for goods services.

Rotterdam and the Hook of Holland have become of increasing importance in the growing goods traffic between Great Britain and Western Germany since the introduction of through goods services between the Hook of Holland and Bentheim. Small consignments from Western Germany for British destinations, and arriving at Bentheim before noon, are due to arrive at the Hook at 6.32 a.m. on the following morning to catch the boat leaving the Hook at 11.30 a.m. A fast goods service through the Hook and Rotterdam, *via* the German frontier station of Kaldenkirchen, on the main line to Cologne, is intended mainly for small consignments between Great Britain and south-west Germany.

Rotterdam Port Railways

The railway system in the Rotterdam port area totals more than 124 route-miles. Almost every berth, shed and quay is rail-connected. In addition, the port railway services have been so organised as to enable every wagon with export consignments, arriving at any of the Rotterdam stations, to be placed alongside ship without delay.

Facilities will be still further improved when the new Central Station, now being built on the site of the former D.P. (Delftsche Poort) Station wrecked during the war is completed. This station will enable the old Maas Station to be closed, and the new and extensive goods station of Rotterdam Noord is intended ultimately to act as a central goods station absorbing also a share of the goods traffic which is to be allotted to the new Central Station. Large modern goods sheds are being erected on the right-hand bank of the Maas.

IRELAND

Wage Increase to Co. Donegal Staff

The Irish Railways Wages Board has granted increases in wages to the 161 employees of the County Donegal Railways Joint Committee. The award brings C.D.R. employees up to the same pay level as the G.N.R. and C.I.E., less ten per cent. The board declined to depart from the agreement whereby County Donegal employees are paid at rates ten per cent less than their colleagues on other railways.

The general manager of the County Donegal Railways said that the company was unable to meet the demands put forward. The payment of salaries and wages in excess of what the company could afford could not go on indefinitely. During 1952 receipts were £78,140 but expenditure totalled £96,740.

Electric Traction Section

Converter Locomotives

Evolution of a form of traction with advantages for hauling heavy trains on steeply-graded routes

FROM the points of view of first cost and weight, if from no others, the converter locomotive has always suffered by comparison with the normal a.c. types. Once transformed—and usually the converter locomotive still employs a transformer for reducing the voltage of the contact wire—the energy has to be converted from a fixed to a variable voltage; often from fixed frequency either to zero (*i.e.* to give d.c.) or a variable frequency; and often from single- to three-phase. The rotating machinery necessary to do all this cannot but be relatively expensive and heavy.

It is of interest, therefore, to note that although this form of locomotive has never been built in such large quantities as the more conventional a.c. types, it has been used from almost the earliest days of electric traction and is still being ordered and built at the present time. For the type of service necessitating the hauling of very heavy trains at slow speeds over hilly routes, the converter locomotive has always possessed technical advantages. It takes its power from the overhead lines at a power factor approaching unity, and a very important feature from the operational point of view is that it is inherently suitable for regenerative braking. Further, the equipment has the desirable characteristic of tending to prevent and quickly stop any wheel slip, there being, of course, no tractive effort peaks such as occur when the supply to the traction motors is taken from transformer tappings.

The term "converter" includes a number of different types of locomotive, and one of the earliest and historically most interesting. This locomotive, built by Oerlikon in 1904, was for the Seebach-Wettingen line and was the first to be built for single-phase current. The frequency of the single-phase 15,000-volt supply was 50 cycles per sec., and a transformer stepped down the voltage to 700. A motor-generator set was employed for converting the low-voltage a.c. from the transformer to d.c. for the traction motors.

Perhaps the most interesting a.c. traction system, from a technical point of view, is that on the Hungarian State Railways, designed by the late Dr. Kando. The original system, used on the locomotives supplied in 1918, employed a method of supply to the traction motor (only one motor was used on the earlier locomotives) similar to the so-called split-phase locomotives, with the important difference that no separate transformer was used. Power at industrial frequency is taken from the 15,000-volt single-phase overhead line *via* a circuit-breaker straight into a phase-converter. The latter acts also as the transformer and reduces the voltage to about 1,000, feeding it either as a 3-, 4- or 6-phase supply to the traction motor. The latter is arranged so that a pole-changing switch group will give combinations of 72, 36, 24 or 18 poles, corresponding to four synchronous speeds. Although the original system employed only one motor, with pole-changing, later locomotives have been built with a frequency-converter as well as the phase converter to supply a variable frequency to four or five traction motors.

Probably the most famous converter locomotives are the large units operating on some of the American railways. For example, locomotives of the split-phase type were put into service in 1925 on the Virginian Railway. Each locomotive consists of three units and each unit weighs about 191 tons. Power is taken from an overhead contact wire at 11,000 volts, single-phase, at a frequency of 25 cycles per second and fed *via* a transformer to the converter set. The latter consists of a two-phase synchronous machine, and by means of a somewhat complicated system of connections, feeds three-phase power to the traction motors. Speed control is by pole-changing of the latter and for starting, liquid rheostats are used in the motor circuits. A converter system was again adopted when the Virginian Railway acquired four new units in 1949, but these locomotives (described in our September 3, 1949, issue) have motor-generators supplying d.c. to the traction motors.

The foregoing sketches some of the historical background to the converter locomotive and it is interesting to record that of the 105 locomotives recently ordered for the Valencienes-Thionville electrification at industrial frequency, 65 will have rotating converter groups and d.c. motors, and a further 20 will have converter sets to convert both frequency and phase and 3-phase a.c. motors.

Arnhem-Zwolle Electrification

Conversion of principal Netherlands Railways main lines completed by Zutphen-Zwolle section

THE inauguration on May 17 of electric operation between Zutphen and Zwolle, brought the present electrification programme of the principal main lines of the Netherlands Railways to a conclusion. The Zutphen-Zwolle section is the last link in the important south-north main line from Nijmegen *via* Arnhem, Zutphen, Deventer, and Zwolle, to Meppel, where it divides for Groningen and Leeuwarden. The Arnhem-Zutphen section was electrified in January, 1953, and described in our January 9 and April 17 issues. The combined Arnhem-Zwolle section, 46 miles long, has been doubled except for a short section between Deventer and Olst, and the double-track sections are signalled automatically.

A ceremonial opening of the Arnhem-Zwolle section took place on May 15, before the introduction of through electric services for the public.

The line is fed from substations at Dieren, Zutphen, Deventer, Wijhe and Zwolle; those at Deventer and Zwolle had already been constructed for earlier electrification schemes. The new substation at Wijhe has two 1,200-kW. (continuous rating) rectifiers of British manufacture (G.E.C.); Dieren and Zutphen have rectifiers of Swiss manufacture (Brown Boveri). All the substations are equipped with 10,000-volt switchgear (Coq) of 250 MVA. breaking capacity. There are also seven track sectioning cabins along the line. At one of these, Brummen, equipment is installed for extracting the rectifier harmonics from the line and using them as a local power supply for lighting.

All substations and cabins are remotely controlled from Zwolle, where 27 substations and 39 switchhouses are now controlled from a single desk. The overhead line is supported by masts of pre-stressed concrete, except where steel frames are used in association with tensioning devices. This electrification increases the aggregate length of electrified lines in the country to 839·5 miles, or some 43 per cent of the entire network. Henceforward the Electrification Department of the Netherlands Railways will be engaged mainly on renewal and maintenance work. It is intended to renew, for instance, the overhead equipment on the Amsterdam-Rotterdam main line, where new standard equipment is to be used. It is also planned to extend overhead supply to certain sidings, and install new rectifiers at some places.

Long-term plans are being prepared for the electrification of further lines including Nijmegen-Roermond, Nijmegen-Tilburg, Venlo-Eindhoven, and Breda-Rosendaal. The completion of the Arnhem-Zwolle electrification has enabled important improvements to be included in the summer timetable, as described in an editorial article this week.

Italian de Luxe Electric Trains

The Italian State Railways and Breda have collaborated in the design and construction of two seven-coach first class long-distance trains for the 3,000-volt d.c. system

THE idea behind the two new seven-car main-line electric trains of the Italian State Railways which have recently received so much publicity in the general press was not to get faster trains or schedules than those already provided by the existing three-car *elettrotreni*, but to give a supplementary *de luxe* service over the Milan-Florence-Rome-Naples route, over which the three-car sets have for long been operating semi-*de-luxe* special-condition trains on schedules as fast as the tracks would allow.

The new trains, like the 3-car sets, have been built by the Soc. It. Ernesto Breda. Compared with the older trains, the principal innovation in the seven-car sets is that the two driving positions project slightly above roof level and that each extremity of the train is in the form of an observation saloon available to passengers in the same way as the beaver-tail saloon at the back end of the pre-war L.N.E.R. "Coronation."

A seven-coach "ETR300" train is 165 m. (542 ft.) long over couplers, and is in three sections; the two outer coaches at each end are articulated as a twin set, and the three centre coaches are articulated as a triple. To make separation of the train into its three groups as easy as possible, each group is connected to the next through Scharfenberg couplers. Of the ten bogies four are trailers and the other six each have two traction motors with individual capacities of 188 kW. one-hour and 150 kW. continuous. Total motor horsepower is thus 3,040 on the one-hour rating, or 9·4 h.p. per ton of empty weight. Top designed speed is 158 km.p.h. (98 m.p.h.), but higher speeds were attained on the trials.

Revenue seats number only 160 and these are arranged in ten compartments. Additionally there are 56 seats in the dining car, and 11 in each of the two observation saloons. Of the seven coaches only four are revenue-earning; the other three are diner, kitchen car, and personnel-baggage-equipment car. The last-named has a sales counter for newspapers, books, souvenirs and small articles, and also has a radio compartment.

Vehicle Construction

A special centre sill of welded thin steel plates forms the real backbone of each vehicle, and from it extend laterally numerous brackets supporting the floor, sides, and equipment. Each side is fabricated as one piece with a fairing which grips the lower part of the vehicle. Centre sill and fairing extend without interruption from pivot to pivot, but there the sill is tapered and the fairing is raised. Normal construction is used for the roof, except that it houses large air-distributing channels and housings for filters and air-conditioners, and has inspecting lids for these.

Heat and Sound Insulation

In these trains it was decided to extend the normal practice on the Italian State Railways of using sprayed Limpet asbestos for heat and sound insulation, and accordingly the whole of the inside surface of the shell—sides, roofs, and ends—has been sprayed with 30 mm. of Limpet asbestos supplied by J. W. Roberts Limited. The underside of the floor is similarly insulated by a thickness of 25 mm. of the same material. These measures provide an exceptionally high degree of insulation against outside temperature and noise.

Motor and trailer bogies are the same in principles of suspension and general construction. The welded steel bolster is supported at each end by twin laminated springs, and hydraulic shock absorbers are fitted. Intermediate rubber pads are inserted between the bolster and the centre pivot and between the bolster and side bearers. The R.I.V. roller-bearing axleboxes are supported by steel helical springs. Cast steel wheel centres are mounted on hollow axles, and the flexible drive from motors to wheel centres is through rubber cushioning pads.

Interior Arrangements

Each of the four passenger coaches has four ten-seat compartments. Six of the seats are fixed and four are separate armchairs. Special springs and foam rubber have been used for these seats. Upholstery is in pale blue wool cloth contrasting with the pearl grey Vinilpelle on the walls, the cream ceiling, and the mottled tan wool floor rug. Fluorescent light and conditioned air pass through the Plexiglass tiles of the ceiling; other light tubes are recessed into the walls. Lavatories for each two-car set are concentrated in the inner coach, where there are small cloakrooms with lighted mirrors, small sofas, and other fittings in keeping with the general *de luxe* standard of the train. The outer coach has its 11-seat "belvedere," or observation saloon, with a sofa and swivel armchairs. Here the upholstery is in brick red, with golden trimmings chosen to match the mahogany of the walls and cream ceiling, and contrasting with the green rubber flooring.

An innovation in these four passenger coaches is that the compartments are separated from the corridor by safety glass partitions, instead of wood or steel partitions with windows let in, and by curtains which can be drawn over the full length. As may be seen from the diagrams the two corridors and vestibule of each twin-car passenger set are on the same side, centre vestibules being used for the centre triple set and for its connections to the end twins. As the passenger portion of the train is air-conditioned, the windows are not made to open, but certain of the corridor windows are arranged for opening by the train staff in an emergency. The windows are of double safety glass with a de-humidified air gap between the two panes.

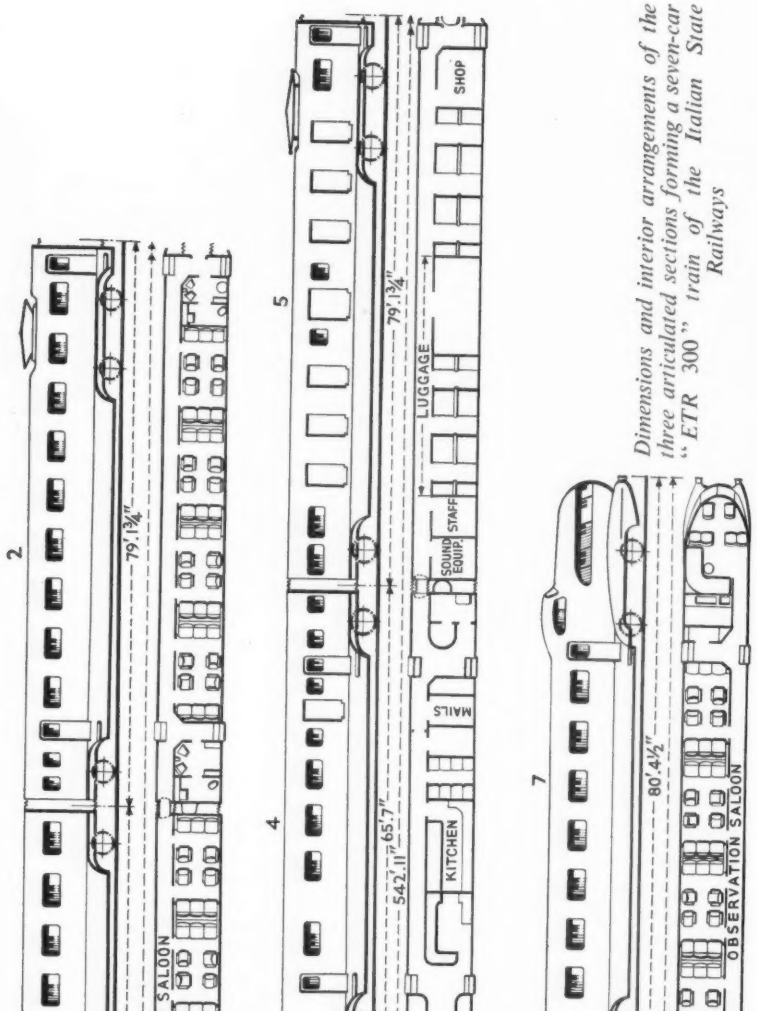
The dining car is lined with ash wood panels; the tables are covered in green Resinflex, and the separate chairs, of cast light alloy, are covered in red with old gold trimmings. At one end of this car is a bar dominated by an overhanging chandelier. This bar has a stainless steel counter and the walls are lined with white parchment; the equipment includes a steam coffee machine, power-driven ice-cream machine, a dish washer, and other items.

Kitchen and Service Cars

Between the restaurant car and the kitchen car is a door controlled automatically and electrically by the approach footboards on either side, so that the staff can pass through easily even with both hands full. The kitchen is all-electric, with range, heater, oven and so forth controlled individually from a special switchboard. A large tilting electric boiler is installed for soups and vegetables. In the fairings of this car is a large electrically-heated hot-water boiler. This coach also contains staff rooms and lavatories, including a hot and cold shower; and there is also a postal compartment.

Adjacent to this car is the service coach housing a luggage room and racks, telephone and radio-telephone booths, a stationers shop, and a compartment for the train conductor from which the lugagge room doors on both sides are operated pneumatically. The telephone and radio-telephone installation provides a public address system throughout the train, over which information, news, or music can be broadcast. Also the radio-telephoning system enables a passenger to be connected with any city telephone network in Italy, and a small soundproof telephone booth is located in this car. The restaurant car has a central passageway, but the kitchen and service cars in the central triple have side corridors with centre vestibules at the ends. Spaces between all cars in the train, however, are covered by full-width rubber bellows, so that an exterior view does not show whether the vestibule is side or centre.

With the sole exception of the heating equipment, which takes its current from the 3,000-volt d.c. catenary, and the emergency lighting plant, which operates on 24-volt d.c. supplied by the batteries,



Dimensions and interior arrangements of the three articulated sections forming a seven-car "ETR 300" train of the Italian State Railways

all other services are powered with 260 volt, 60-cycle a.c. This is supplied by two alternators, each of 80 kVA., three-phase, capacity with corresponding exciter. Each alternator is driven by a 3,000-volt d.c. motor, with series and individual excitation, and both motors are connected together in series from the catenary. A Breda dyna-relay has been adopted to adjust the alternator voltage to any sudden load and voltage variations which might occur in the overhead-line.

Air-Conditioning

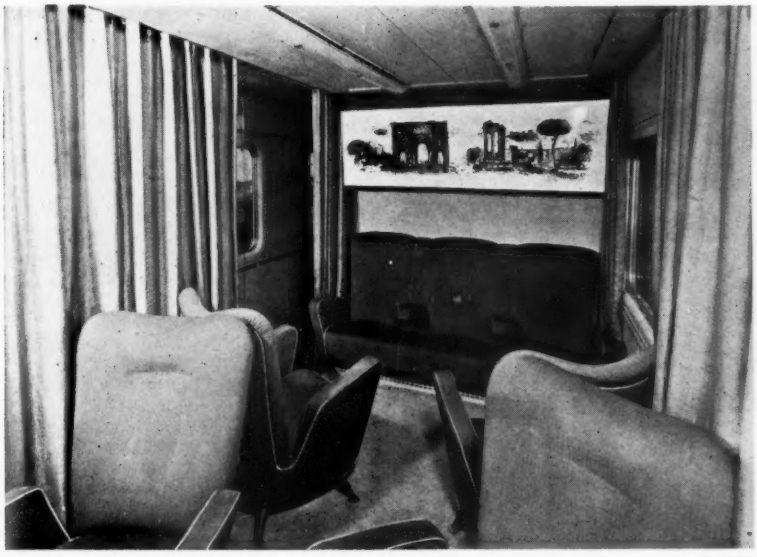
Except for the kitchen and service cars, the whole train is fully air-conditioned on the Stone Carrier system, with equipment supplied to the Soc. It. Ernesto Breda, the builder of the trains, by J. Stone & Co. (Deptford) Ltd., from its works in England. The compressor, condenser, and certain other items are housed inside the coach fairing, but the a.c. power unit is carried in the roof.

Each of the four passenger coaches is provided with cooling equipment of seven tons capacity; that is, it will absorb 21,000 k.cal. per hr. (84,000 B.Th.U. per hr.). Heating provided amounts to 20,000 k.cal. per hr. (80,000 B.Th.U. per hr.) for each of the two end coaches, and 18,000 k.cal. per hr. (71,000 B.Th.U. per hr.) for Nos. 2 and 6 coaches. This heating is divided into two sections, some heating the air in circulation and the remainder at floor level, 11,000 k.cal. per hr. (45,000 B.Th.U. per hr.) being used for the air heat from 13-kW. heating banks mounted in the air-conditioning units. The remaining heat comes through electrical elements at or near floor level.

The restaurant car requires a greater quantity of outside air to eliminate the kitchen and food odours. It is therefore equipped with a more powerful air-conditioning plant, comprising two air-conditioning units in the coach having a joint capacity of 10·5 tons refrigeration; that is, they will eliminate 31,500 k.cal. per hr. (125,000 B.Th.U. per hr.). The heating also is of greater capacity, the combined air heat in the two units having an output of 16,000 k.cal. per hr. (63,000 B.Th.U. per hr.), in addition to the 8,000 k.cal. per hr. (32,000 B.Th.U. per hr.) of floor heat arranged throughout the coach.

Refrigerant used in the cooling equipment is Freon F.12 (dichloro-difluoromethane) which is considered to be particularly suitable for railway air-conditioning, as it will not support combustion, is non-toxic, non-odorous and non-corrosive.

Two fans in the equipment circulate the conditioned air through the air-distribution ducts arranged above the false ceiling, after the air has been filtered, cooled and de-humidified or heated as the conditions demand. Total air circulation in the passenger coaches is 3,700 cu. m. per hr. (2,200 cu. ft. per min.) drawn from the passenger space, and 1,000 cu. m. per hr. (600 cu. ft. per min.) of outside air. All the air in circulation is filtered and conditioned as required



Interior of a first class compartment showing the three fixed seats at one end and some of the movable chairs

before being introduced into the passenger space.

A quantity of air equivalent to the outside air entering the coach escapes to atmosphere through exhaust grilles in the lavatory and control panel cupboard, thus keeping the switchgear cool and the lavatories ventilated. Each coach has 37 changes of conditioned air per hour, of which the proportion of outside air gives complete renewal of the air inside the coach every six minutes. The quantity of conditioned outside air represents 25 cu. m. per hr. (15 cu. ft. per min.) for each passenger, with all seats taken. The greater air circulation of the dining cars gives figures approximately 50 per cent greater.

After the air-conditioning equipment is switched on, the control equipment provides either ventilation only or ventilation with cooling or heating as required. The transition from one to the other is effected automatically by the action of five thermostats placed behind the return air filters in each coach. The main switch on the control panel has four temperature-selection positions, ranging from 22° C. to 26° C. for cooling and four selections ranging from 19° C. to 22° C. for heating.

One of the more important features of the control system is that not only are the coach temperatures maintained constant, but when cooling is called for, the control is based on effective temperature. Effective temperature is a convenient term to describe the relative effect on the human body of various combinations of temperature, moisture content, and air motion. The control system is based on mercury-in-glass type thermostats which have both wet and dry bulbs exposed to the air. These thermostats operate with a very close differential of approximately 0.3° C., and stop or start the compressor unit through the medium of relays and contactors.

A further important feature of the air-conditioning equipment is the unloading type of compressor used, whereby a virtually constant suction pressure is maintained in the evaporator by varying the number of cylinders of the compressor that are effectively operating. The constant suction pressure maintains constant dew point under varying refrigeration loads, thus helping to keep the percentage relative humidity in the coach to a comfortable level at all times. The compressor unloading devices, operating through oil-pressure servo-motors, result in the compressor starting and running virtually unloaded until the oil pressure builds up. The unloading feature is self-compensating and sufficiently stable to rule out any danger of cyclic oscillations.

Braking System

An accelerator, or decelerator, valve is included in the RIV air-braking equipment so that maximum braking force is in correspondence with the train speed. The air-brake system has two distinct piping arrangements: (*a*) the pressure piping connecting all main tanks; and (*b*) the automatic brake piping. Both installations run along each single train unit and are interconnected by flexible joints and couplings.

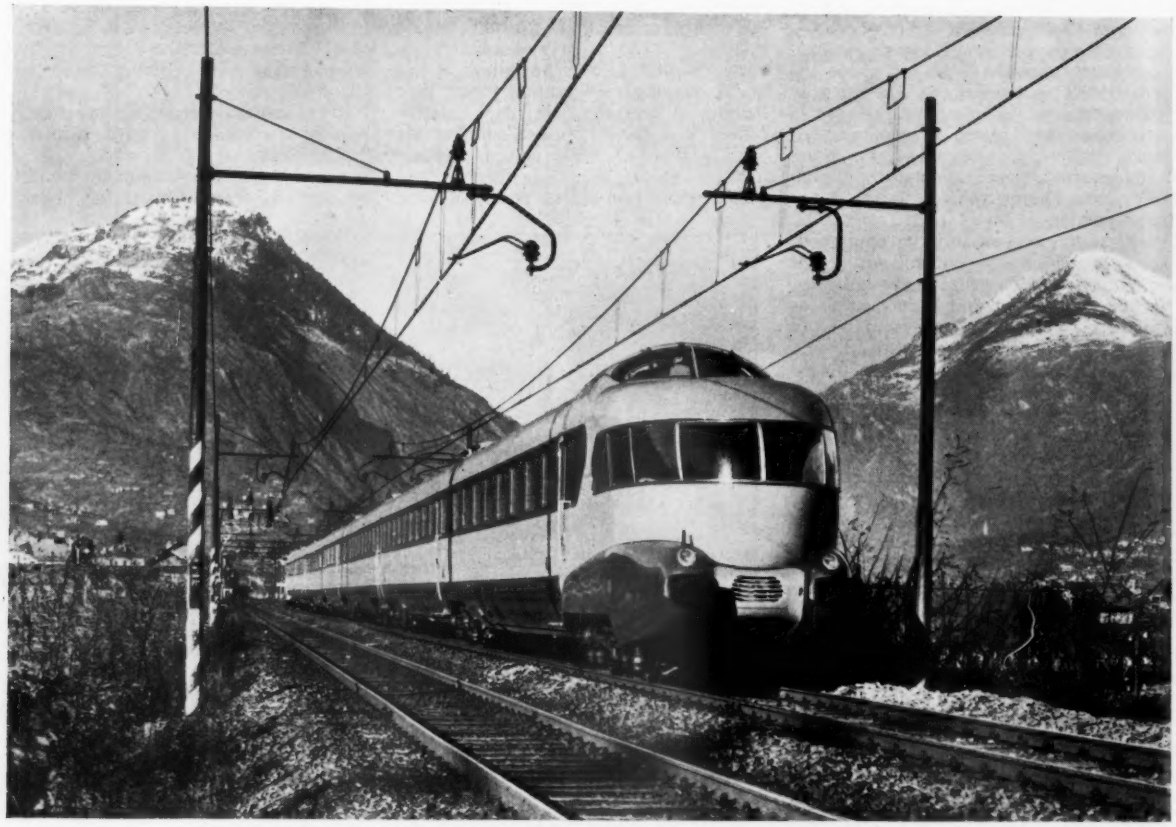
Braking action on the train is effected more rapidly when the train is proceeding at high speed by six accelerators of the Italian State Railways type; and six RIC-AV electro-pneumatic devices automatically adjust the maximum braking power to the speed of the train. Each device consists of an air-pressure reduction valve, pneumatically controlled and developing a differential action, and of an electro-pneumatic relay equipped with an electric circuit-breaker. The relay exciting and de-exciting circuit is controlled by a mercury-type centrifugal governor splined on one of the axles; this governor is controlled by the value of the rate of deceleration reached by the train during braking. The governor opens or closes the circuit breaker, thus connecting or disconnecting the electro-pneumatic relay.

Every axle is equipped with two brake cylinders controlling two twin-shoe brake blocks on each wheel. Other equipment includes ammeter, safety valves, anti-freeze apparatus, centri-

Interior of dining car, which is lined with ash wood panels and furnished with separate chairs of cast light alloy construction

Italian de Luxe Electric Trains

One of the new seven-car trains between Bologna and Florence



Seven-car, 320-ton train on a trial run

fugal separators, air reservoir, cut-off valves, air filters, end couplings for pressure pipings and brake pipings, whistles with control valves, distributors, and an electric-pneumatic device for effecting the raising and lowering of the pantograph.

Traction Motors and Control

The traction equipment consists of two six-motor units similar to those mounted as standard equipment on the previous triple-car electric trains. Each motor has an hourly rating of 188 kW. at approximately 900 r.p.m. The motors are wound for 1,500 volts and are insulated to earth up to 3,000 volts. They are permanently coupled two in series. During the starting stages, the three groups of two series-connected motors of each unit are connected in any of the three combinations: motors in series, in series-parallel, and in parallel pairs.

This provides three basic power ratings for economic running. Five reduction stages have been provided for the induction field of the motors in each of the series and series-parallel combinations and four in the parallel combination, so that including the full-field positions there are 17 different economical speeds available. The two six-motor units installed in the complete seven-car train are simultaneously operated by the control circuit, which operates at 24 volts d.c.

End observation saloon, of which there are two in each train

The electro-magnetic control equipment, of Italian State Railways type, embodies a new design of single contactor. One of the most important features of these contactors is the box moulded in two halves made from insulating material which houses all vital parts of the contactor, beginning with the arc-quenching magnet winding and including the pneumatic devices controlling the membrane-type movable contact which replaces the conventional plunger-type model. Both the main contact and the arc-breaking devices, at the end of the arc-quenching sleeves, are also new in design.

Other parts of the power control equipment, such as the electro-pneumatic reversers, the relays for protection against overloads and short circuits, the starting rheostats with armoured elements, the acceleration relays, and generally all the auxiliary control and instrument equipment, are substantially the same as those used as standard on the earlier three-car electric trains and "ALC 840" single-unit motor coaches. Adjacent ends of the cars are equipped with high and low voltage circuit couplers which can be easily disconnected.

British-Built Co-Co Locomotive at Work in Spain

One of the 3,000V., 3,600 h.p. locomotives built by the English Electric Co. Ltd. and the Vulcan Foundry Limited for the Spanish National Railways heading a train at Ujo in Asturias

Improvements in Gippsland, Victoria

Extension of electrification and progress of doubling

Separation of up and down lines between Warragul and Drouin. On left, down line at surface level with overhead equipment installed, and, on right, up line in cutting

AN account of the regrading, realignment and doubling of a section of the main Gippsland line of the Victorian Railways between Longwarry and Yarragon, part of a general scheme of improvements in this part of the State, appeared in our April 21, 1950 issue. It will be remembered that the purpose of the work was to reduce the ruling gradient against up trains from 1 in 50 to 1 in 110, thus increasing the capacity of the line for the working of heavily-laden coal trains from Yallourn to Melbourne and so coping with the expanding output of brown coal mined by the State Electricity Commission at Yallourn and its future activities at Morwell. Eventual electrification of the line from Dandenong (the end of the electrified suburban area) to Traralgon, nearly 100 miles from Melbourne, was referred to in our October 19, 1951, issue.

First Stage Completed

What may be described as the first stage of the whole project, the 18 miles from Longwarry to Yarragon, is substantially completed and there is now double-track working between those two places. Progress has been made with the next stage, electrification between Dandenong and Warragul with regrading where necessary, and doubling between Dandenong and Longwarry. This work is being done concurrently.

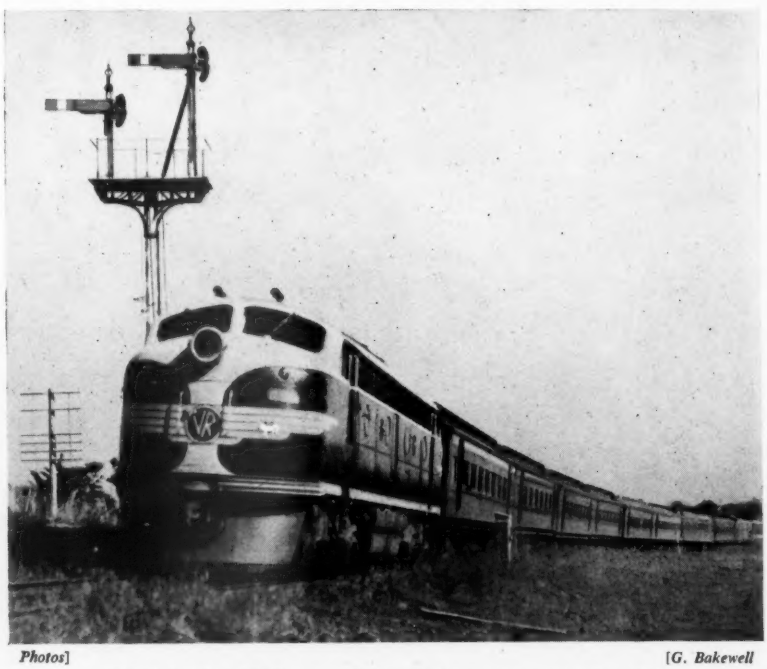
Preliminary earthworks may be seen in places between Dandenong and Nar-Nar-Goon ready for laying extra track. Between Nar-Nar-Goon and Longwarry the regrading is farther advanced and portion of the extra track is already laid though not yet in use. The gradients over the Dandenong—Longwarry section are not nearly so severe as those in the first stage already referred to.

Electrification from Dandenong to Narre Warren, six miles of single line, is now complete and has been tested. Provision has been made when erecting overhead equipment for eventual double track. The suburban electric service may be extended to Narre Warren if it becomes necessary. At present it is a small country place but suburban settlement and industry are creeping out towards it. The overhead runs beyond Narre Warren to the substation and track-sectioning cabin between there and Berwick.

Most of the work taking place at present is being carried out in the Nar-Nar-Goon - Tynong - Garfield area. Overhead supports for electric wires are in position and wiring is in progress although not yet complete. Nearer Warragul much of this has been done although some sections are only partly finished. For instance, from Druin to Warragul part of the track forms a long gradient separation. Overhead supports and wires have been erected for part of the down line which is at surface level, while the up line in cutting is not so advanced. Installation of automatic colour-light signals is also being carried out in the area mentioned above.

Substations

Substations and track-sectioning cabins have been erected at points along the line. They will be unattended and all their equipment will be automatic. They will be under the control of a



Photos] [G. Bakewell

Diesel-hauled Melbourne-Bairnsdale express near Berwick

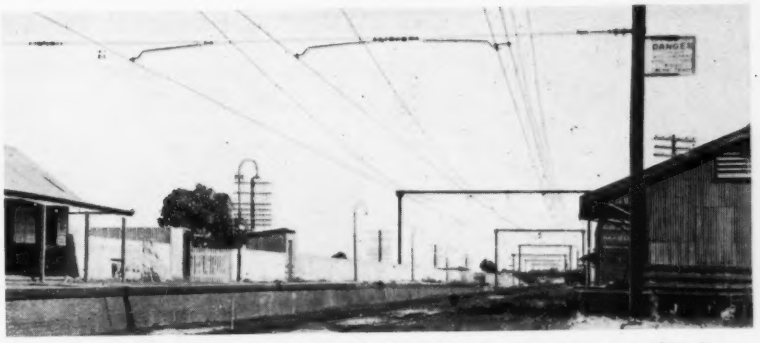
power operations engineer in a central depot to be built at Warragul. Each substation and track-sectioning cabin will be connected to the power operations room by means of two telephone wires through which supervisory equipment will be operated. Electric power for the line will be supplied by the State Electricity Commission with main supply points at Caulfield (between Melbourne and Dandenong), Pakenham, Warragul, and Morwell. An interesting feature of this main-line electrification will be the extensive use of mercury-arc rectifiers, some of the first in the world to be so applied.

Mixed-Traffic Electric Locomotives

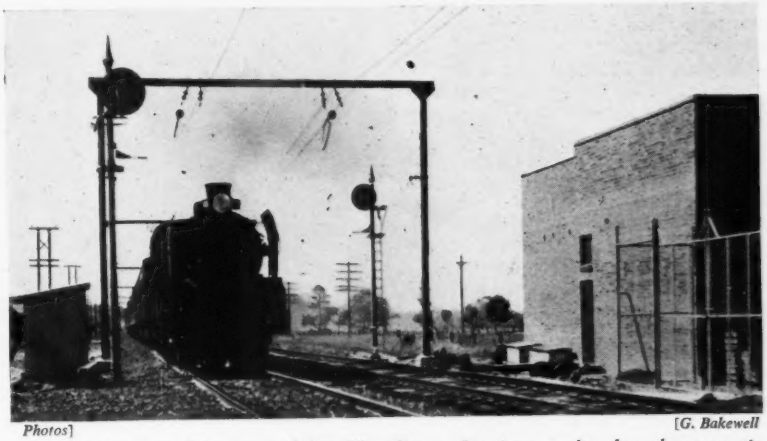
Electric locomotives to be used are of the Co-Co type, 2,250 h.p., designed for both passenger and freight service. These are being built by the English Electric Co. Ltd.; the first arrived in Victoria recently and now is being tested. The class was described in our March 20 issue.

The locomotives, of which 25 are on order, weigh 96 tons and will be able to haul passenger trains at up to 75 m.p.h. and goods trains weighing 1,100 tons up 1 in 110 at 30 m.p.h.

The principal passenger train on the line is the Melbourne-Bairnsdale express which was formerly worked by "A2" class steam locomotives but is now hauled by diesel-electric engines. A buffet car and air-conditioned coaches are included on the train, which leaves Melbourne at 8.35 a.m. The 174 miles to Bairnsdale are covered in just over five hours.



Narre Warren Station, to which electrification has been completed



Photos] [*G. Bakewell*

Up train between Tynong and Nar-Nar-Goon, showing overhead, and automatic signals; on right, partly completed double track and new substation and track-sectioning cabin

REPLACEMENT FOR SS. "PRINCESS VICTORIA" ON LARNE-STRANRAER CROSSING.—The *Hampton Ferry* is stated to be scheduled for transfer in the near future from English Channel duties to take the place on the Larne-Stranraer crossing of ss. *Princess Victoria*, which foundered in the storm on January 31. The *Hampton Ferry* is one of the train ferries normally working on the Dover-Dunkirk route conveying passenger (London-Paris sleeping cars) and freight vehicles.

PHOTOGRAPHIC EXHIBITION.—The Railway Correspondence & Travel Society and Railway Photographic Society Exhibition will be on view at the rooms of the Shirley Photographic Society, The Shirley Institute, Church Road, Shirley, Birmingham, on Wednesday, Thursday, and Friday, June 24-26, between 7 p.m. and 9.30 p.m. Admission will be free; catalogues (price 1s.) will be on sale.

BRITISH TRANSPORT YACHT CLUB.—On May 24, Sir Reginald Hill, Chairman of the Docks & Inland Waterways Executive, Mr. J. W. Watkins, Chief Regional Officer, London Midland Region, and Mr. C. S. McLeod, Regional Staff Officer, Eastern Region, officially opened the new British Transport Yacht Club on the Welsh Harp at Hendon. The club is open to all members of the staff of the British Transport Commission and it is hoped to extend its activities to other parts of Great Britain. The club is beginning with a "Firefly," and two Bermudan dinghies. The "Firefly," named after the late Mr. Robert Davidson, a past member of the Docks & Inland Waterways Executive, was named by Sir Reginald Hill on behalf of Lady Hill, who was unable to be present; and the two dinghies were named *Joan* and *Margaret* after two of the daughters of Mr. & Mrs. Watkins. Mrs. Watkins named and launched *Margaret* and Miss Joan Watkins named and launched her own boat. The proceedings were followed by a garden party.

NATIONAL INDUSTRIAL SAFETY CONFERENCE.—A record number of over 630 delegates attended this year's National Industrial Safety Conference held at Scarborough from May 29 to 31. The Conference was organised by the Industrial Safety Division of the Royal Society for the Prevention of Accidents. On the opening night a paper on "Progress in Accident Prevention in Heavy Industry" was read by Mr. W. Geary, Works Manager (Services) of the Appleby-Frodingham Steel Co. Ltd. The paper had been prepared in conjunction with Lt.-Commander G. W. Wells, General Manager and Director of the Appleby-Frodingham Steel Co. Ltd. Other speakers included Mr. R. E. Tugman, Division Safety Officer, Alkali Division, Imperial Chemical Industries Limited, who spoke on "Accident Prevention—The Personal Factors"; and Mr. F. A. Smith, Materials Handling Engineer for the Rugby works of the British Thomson-Houston Co. Ltd., whose subject was "Traffic Problems in Modern Works." A trade exhibition of safety appliances, protective clothing and other safety equipment, was held in conjunction with the conference.

C.N.R. HAMBURG AGENT.—H. C. Rover, G.m.b.H., 6-8, Bohnenstrasse, Hamburg 11, Western Germany, has been appointed a freight agent for the Canadian National Railways.

CORONATION TRAVEL BY BRITISH RAILWAYS STEAMER SERVICES.—During the week preceding the Coronation and up to June 1 more than 30,000 passengers arrived in London from the Continent by Southern Region cross-Channel services. A large party of official guests from overseas travelled from Calais to Dover in the specially chartered ss. *Maid of Orleans*.

NEW STOCK FOR CHICAGO-PACIFIC COAST SERVICE.—Construction has begun at the St. Charles works of the American Car & Foundry Company on 112 streamline coaches for the Union Pacific and eight for the Chicago & North Western, to be used on the joint streamline service between Chicago and the Pacific Coast. Included in these orders are 16 Pullman sleeping cars, five observation-lounge cars, 49 de-luxe reclining seat chair cars, 11 diners, two kitchen-dormitory cars, two railway post-office cars, and 35 baggage cars. Fifteen of the passenger-carrying cars will have glass-enclosed observation domes.

Bulawayo Locomotive Depot

Completion of further stage in Rhodesia Railways development programme

A NEW locomotive depot at Bulawayo, Rhodesia Railways, comprising new running sheds, an electric coaling plant and the largest turntable in Africa, was opened by Major-General Sir John Kennedy, Governor of Southern Rhodesia, on April 18.

In his opening address the Governor paid a glowing tribute to "the splendid and remarkable achievements of the railways" during his seven years in office. Rhodesia Railways had kept pace magnificently with the phenomenal development and expansion that had taken place in Central Africa in the last ten years. The tonnage hauled since 1946 had been doubled and the mileage run had nearly doubled. The amount of capital expenditure spent on developing the system since 1946 was over £50,000,000. "Indeed, without this great and successful effort by the railways," said the Governor, "the expansion and development of the country could never have taken place." He pointed to the programme of housing which had been carried out; both the European and African staff of the railways were now nearly all properly housed, 2,500 new houses having been built for Europeans and 5,300 for Africans. Hundreds of miles of new lines were being laid and they were getting within sight of the time when the railways would be adequate for the country's needs. The completion of the fine new locomotive depot at Bulawayo was only one item in the great programme of work in hand.

The depot can service 120 large modern locomotives and has been planned in such a way that it may be expanded to service 300. Therefore, said Sir John Kennedy, it should, with enlargement from time to time, be able to meet the needs of the railways for another 50 years at least.

More than 500 businessmen, industrialists, Government and civic officials and their wives attended the opening. On their arrival at the depot, Sir John and Lady Kennedy were welcomed by Sir Arthur Griffin, Chairman, Rhodesia Railway Board, and Lt.-Colonel H. B.

(*Continued on page* 685)

Group taken at the opening of the depot, showing (left to right) Lt.-Colonel H. B. Everard, General Manager, Rhodesia Railways; Sir John Kennedy, Governor of Southern Rhodesia; Lady Kennedy; and Sir Arthur Griffin, Chairman, Rhodesia Railway Board

A "16A" class Beyer-Garratt locomotive on the 95-ft. turntable

RAILWAY NEWS SECTION

PERSONAL

Mr. D. C. Woodward, C.M.G., General Manager, Nigerian Railway, retires in August.

Lord Aberconway has been appointed Chairman of Firth Brown Tools Limited in place of his father, the second Baron and former Chairman of the company, who died on May 23.

Mr. D. P. Mathur

Appointed Director, Finance (Budget), Railway Board, India

Mr. S. Ramayya

Financial Adviser & Chief Accounts Officer, Southern Railway, India

Mr. D. P. Mathur, who has been appointed Director, Finance (Budget) Railway Board, Ministry of Railways, India, was educated at Allahabad University, where he obtained an M.Sc. in physics. He joined the Indian Railway Accounts Service on passing the Indian Audit & Allied Service Competitive Examination early in 1930, and was posted to the East Indian Railway. In April, 1937, he was transferred to the North Western Railway as a Senior Scale Officer and continued there till January, 1943, during which period he was selected to work on an inquiry commission, the services of which were specially commended by the Government of India. In February, 1943, he was selected by the Railway Board for appointment in the Central Government Pool as Under Secretary in Finance (Communication Branch). At the end of 1944, his services were recalled by the Railway Board and he was placed on special duty as Joint Director, Finance, Railroad Co-ordination, for preparing schemes of development of Railroad services, in which the railways would hold financial interests, in consultation with the Provincial Governments. From May, 1945, to August, 1945, he was appointed by the Railway Board to officiate as Director, Railroad Co-ordination. In September, 1945, he took over as Joint Director, Finance (Expenditure), Railway Board. In April, 1948, he was placed on special duty as Chairman of the Marine Inquiry Committee, and later, as Chairman of the Running Staff Pay & Allowances Committee, both set up for securing uniformity in the scales of pay of the marine establishments and allowances paid to running staff of the Indian Government Railways. In September, 1948, he was specially deputed with the team of railway officers to Hyderabad, and was appointed as Financial Adviser, Railways, under the State Government. At the end of 1949, he was appointed as Financial Adviser & Chief Accounts Officer, Indian Government Railways, and was posted to Trichinopoly, which office he held until April, 1951. On the formation at that date of the Southern Railway he was transferred as Financial Adviser & Chief Accounts Officer, Eastern Railway.

We regret to record the death on June 7, at the age of 81, of Colonel Sir Gordon Hearn, for many years engaged on survey work on Indian railways.

Mr. S. Ramayya, M.A., I.A. & A.S., F.A. & C.A.O., Financial Adviser & Chief Accounts Officer, Southern Railway, India, was born on October 24, 1904. He was educated at Madras Christian College, where he graduated in economics in 1920. In 1926 he was appointed Lecturer in economics in the National College, Trichinopoly, and, in 1929, having passed the competitive examination of the Indian Audit & Accounts Service, he joined this service as Probationary Assistant Accountant-General in Bombay and continued there as Assistant Accountant-General. In 1938 Mr. Ramayya was posted as Assistant Accountant-General, Madras. In 1940, he was appointed Deputy Auditor & Deputy Government Examiner of Railway Accounts for various railways including the then Great Indian Peninsula, Bombay, Baroda & Central India, and South Indian Railways. He was posted to Madras in 1943 as Deputy Accountant-General, and, in 1945, become Comptroller, Orissa. In 1947 he was appointed Deputy Secretary, Ministry of Finance, Government of India, New Delhi, and, in 1950, he took charge as Accountant General, Bihar, later becoming Accountant General, Travancore State, Trivandrum. He was appointed to his present position of Financial Adviser & Chief Accounts Officer, Southern Railway, in April, 1952. Outside railways, Mr. Ramayya's interests include art and archæology.

Mr. J. A. Kruger

Appointed Chief Superintendent (Operating), Johannesburg, S.A.R. & H.

Mr. J. J. Kesting

Appointed Member, S.A.R. & H. Service Commission, Pretoria

Mr. P. G. Joubert

Appointed System Manager, Pretoria, S.A.R. & H.

Mr. J. A. Kruger, B.Comm., who, as recorded in our May 1 issue, has been appointed Chief Superintendent (Operating), Railway Headquarters, Johannesburg, started his railway career as a transportation pupil in the office of the System Manager, Pretoria, on July 1, 1930. He was appointed Senior Clerk in the Operating Office at Headquarters on February 1, 1937. He became Principal Clerk in the Trains Section of the System Manager's Office, Johannesburg, on May 1, 1944, and was promoted Chief Clerk at Headquarters two years later. Mr. Kruger then held the positions of Assistant Superintendent (Research), in the Operating section of the General Manager's Office, Superintendent in that section, Superintendent (Operating & Research), Headquarters, and Superintendent (Operating) in the office of the System Manager, Johannesburg. On August 11, 1952, he was appointed Administrative Secretary to the Minister of Transport, Pretoria, from which position he now returns to Johannesburg to take up his new post.

Mr. J. J. Kesting, A.M.Inst.T., who, as recorded in our May 1 issue, has been appointed a Member of the South African Railways & Harbours Service Commission, Pretoria, was born in Holland on October 10, 1894, and joined the service of the South African Railways as a junior clerk on the Western Transvaal system on April 5, 1909. He served as a clerk at various stations until being appointed Stationmaster, Teakworth, in February, 1923. Two years later he was transferred to Railway Headquarters, Johannesburg, and was appointed Road Transport Officer at Bloemfontein during October, 1932. In 1936 Mr. Kesting took up a similar position in Durban from where he returned to Headquarters during October, 1937. He then became Goods & Passenger Superintendent at Pietermaritzburg. Promotion to Superintendent (Commercial & Staff) took him to Bloemfontein in September, 1949, where he remained until being transferred to Pretoria as Superintendent (Commercial) a year later. His appointment to the S.A.R. & H. Service Commission took effect from April 13, 1953.

Mr. P. G. Joubert, M.Sc., who, as recorded in our March 20 issue, has been appointed System Manager, Pretoria, South African Railways & Harbours, began his railway career as a transportation pupil in 1929. He was appointed Senior Clerk in the Trains Section at Railway Headquarters in 1935. During 1937, Mr. Joubert transferred to the Minister's office at Pretoria, and was promoted Principal Clerk in the office of the Railway Board a year

Mr. P. Ghilain

Formerly Directeur du Matériel et des Achats, Belgian National Railways

Mr. Albert Brouckaert

Appointed Directeur du Matériel et des Achats, Belgian National Railways

Mr. A. Jessop

Appointed Transport Adviser to the Government of Mauritius

later. As Principal Clerk he also served in the Trains Section of the System Manager's office at Durban and Johannesburg. Promotion to Operating Assistant, Beaufort West, followed towards the end of 1942 and, in April, 1944, he took over the duties of Assistant Superintendent (Operating), Pretoria. Mr. Joubert then became, in turn, Superintendent (Operating Research), Operating Officer (Research & Investigation) and Chief Superintendent (Operating), at Headquarters. From the latter position he transferred to Pretoria on February 1, last, to take charge of the railways on the Eastern Transvaal system.

Mr. P. Ghilain, Vice-President & General Secretary of the International Railway Congress Association, who will be General Secretary of the Executive of the XVIth International Railway Congress to be held in London in May, 1954, has, as recorded in our April 17 issue, retired from his position of Directeur du Matériel et des Achats, Belgian National Railways. Mr. Ghilain joined the Belgian State Railways in 1909, and, after three years as Engineer in the repair shops, was transferred to the administrative side of the Locomotives & Rolling Stock Department. From 1925 to 1927 he was President of the Committee of Reception for Rolling Stock & Stores, and in the latter year, after the formation of the Belgian National Railways Company, he became Assistant "Chef de Cabinet," Ministry of Transport. Shortly afterwards, he was appointed Chief Engineer, Locomotive & Rolling Stock Department, and later, Directeur du Matériel et des Achats, Belgian National Railways. Mr. Ghilain is a Commandeur de l'Ordre de Léopold, Commandeur de l'Ordre de la Couronne and is the holder of many other distinctions, both Belgian and foreign.

Mr. Albert Brouckaert, who, as recorded in our April 17 issue, has been appointed Directeur du Matériel et des Achats, Belgian National Railways, was born in 1907, and graduated as a civil engineer (mining) at Louvain in 1929. He entered the Engineering Department of the Belgian National Railways in 1930, and in 1931, he became Engineer in Charge of Locomotive Maintenance at Berchem-Antwerp, Muizen, and Antwerp South. In 1936, Mr. Brouckaert was appointed Engineer in Charge of Merelbeke and Gent-Zeehaven depots, Ledeberg Rolling Stock Workshops, and Merelbeke and Gent-Zeehaven Wagon Works. In 1940, he became Engineer in Charge of Locomotive Maintenance at Schaerbeek, the Schaerbeek electric traction workshops, and the Schaerbeek carriage and wagon works. In 1941, he was appointed Engineer-in-Charge of the Antwerp Group, in 1944, Chief Engineer, Supplies & Purchases Department, Steam Locomotive Maintenance Section, in 1952, Chief Engineer Assistant to the Director of Supplies & Purchases, and, on March 1, 1953, Director of Supplies & Purchases, Belgian National Railways.

Mr. Arthur Jessop, A.M.Inst.T., Assistant (Commercial Development), Chief Commercial Manager's Department, London Midland Region, British Railways, who, as recorded in our May 15 issue, has been appointed Transport Adviser to the Government of Mauritius, was educated at the Society of Friends School, Penketh, Lancashire, and joined the Lancashire & Yorkshire Railway in 1918. He served at various stations, and was subsequently transferred to the Office of the Superintendent of the Line, Manchester. He went in 1925 to the General Superintendent's Office, Derby, L.M.S.R., and in 1929 was transferred to London. Subsequently he was engaged as Assistant (Outdoor) in connection with the road and air transport interests of the company and on other special matters. He was appointed Assistant to Chief Commercial Manager, London Midland Region, in 1948. Mr. Jessop is a Director of the Lincolnshire Road Car Co. Ltd., Hebble Motor Services Limited, West Yorkshire Road Car Co. Ltd., Yorkshire Traction Co. Ltd., and Yorkshire (W.D.) Transport Co. Ltd., and a member of the Management Committee of the Eastern National Omnibus Co. Ltd., and of the Corporation & Railways Joint Omnibus Committee at Halifax, Huddersfield, Sheffield and Todmorden. As Assistant to the Chief Commercial Manager, he was concerned with the commercial aspects of road transport, trade advertising, development of amenities and equipment of passenger stations and electrification schemes, including passenger planning in the London area.

Sir William Stanier has joined the board of Brynmawr Rubber Limited.

Mr. C. W. Putsey, Chief Superintendent (Operating & Commercial), Nigerian Railway, is to retire in July.

Mr. J. E. Paradis, Q.C., has been appointed manager of the Real Estate Department of the Canadian Pacific Railway at the company's headquarters in Montreal. He succeeds Mr. Arthur S. Piers, who has retired after more than 50 years' service. Mr. Paradis, a native of Ottawa, joined the C.P.R. as an Assistant Solicitor in 1934.

British Railways, North Eastern Region, announce the appointment of Mr. E. E. Cowell, District Operating Superintendent, Sunderland, as District Superintendent, Newcastle.

The appointments are announced by British Railways, Western Region, of Mr. H. E. A. White, District Motive Power Superintendent, Neath, as District Motive Power Superintendent, Bristol; and of Mr. L. C. Barron, Staff Assistant to the Motive Power Superintendent, Eastern Region, as Staff Assistant to the Motive Power Superintendent, Swindon.

The appointment is announced by British Railways, North Eastern Region, of Mr. Clifford L. Parkinson, Assistant District Engineer, Barrow-in-Furness, as Assistant District Engineer, Darlington.

We regret to record the death on June 4, at the age of 79, of Brigadier-General Sir Charles Magniac, C.M.G., C.B.E., who had long and distinguished service on Indian railways. He was educated at the United Services College, Westward Ho!, and joined the Indian railway service in 1896. He received the thanks of the Government for famine relief work in the North-West Provinces in 1897 and was again thanked in the following year for his work during the Tirah campaign. For some years he was Agent for the Madras & Southern Mahratta Railway. After the outbreak of war in 1914 he was successively Assistant Director of Railway Transport, Deputy Director of Transportation, and Director of Movements at Army Headquarters, India, and was appointed C.M.G. in 1916 and C.B.E. in 1919. He retired in 1922 and was knighted in the course of the next year.

Mr. E. J. Borron, whose name appears in the Coronation honours list as a recipient of the O.B.E., is Commercial Assistant to the General Manager, and not Assistant General Manager, Nyasaland Railways (as shown in *The London Gazette* of June 1, cited in our last week's issue).

PRESENTATION TO MR. ERIC COLEBY

Some 25 ex-L.N.E.R. Officers met at Liverpool Street on May 28 to bid farewell to Mr. Eric Coleby, Legal Adviser to the Railway Executive, who, as recorded in our May 8 issue, retired on May 9. The company included three Chief Regional Officers, Mr. C. K. Bird (Eastern), Mr. T. F. Cameron (Scottish), and Mr. C. P. Hopkins (Southern Region), also officers now with the B.T.C., the Railway Executive, and the several Regions of British Railways. Mr. E. W. Rostern, Operating Superintendent, E. & N.E. Regions, who presided as Mr. Coleby's earliest railway colleague, said that over 50 officers had joined in tribute to Mr. Coleby's many qualities; other speakers referred to his helpfulness in an official capacity, and to his talents as a model engineer and as a golfer. Handing over a parting gift of a cheque for the purchase of a radio-gramophone, Mr. C. K. Bird said that Mr. Coleby was a good lawyer and a good railwayman who had always been willing to give clear and definite advice when it was wanted. Mr. Coleby replied briefly, mentioning his pleasure in making so many good friends in his railway career.

We regret to record the death on June 3, at the age of 73, of Mr. Robert Kelso, until recently Chairman of the General Steam Navigation Co. Ltd.

The funeral of Sir Sam Fay, who, as recorded in our June 5 issue, died on May 30, was held privately at Awbridge Church, near Romsey, on June 3.

Bulawayo Locomotive Depot

(*Concluded from page* 682)

Everard, General Manager, Rhodesia Railways, and members of the Board. With them on the dais during the opening addresses sat Councillor C. M. Newman, Mayor of Bulawayo; Mr. G. A. Davenport, Minister of Transport, Mines & Education; Lt.-Colonel Everard; Mr. G. E. Thorton; Mr. L. Davies; and Mrs. T. H. Grey.

The Governor and Lady Kennedy then boarded a "15th" class Beyer-Garratt locomotive, which had been burnished and flew on the front two Union Jacks, and drove it a short distance on to the new turntable. The engine and its passengers were then driven off the turntable to break a white ribbon, signifying the opening.

The new depot has a total yard area of 36 acres, compared with six acres of the old depot, and the length of its tracks is 6¼ miles. The floor area of the shed is 76,050 sq. ft., compared with 24,200 sq. ft. and the pits total 5,750 ft. in length, against 875 ft. The excavations totalled 165,000 cu. yd. and 400 tons of structural steel was used. The cost of the project is £365,550.

British Transport Commission Statistics (Period No. 4)

Summary of the principal statistics for the four-week period ending April 19

STAFF

—	B.T.C. Head Office	British Railways	London Transport	British Road Services	Road Passenger (Provincial)	Hotels & Catering	Ships & Marine	Inland Waterways	Docks, Harbours, Wharves	Railway Clearing House	Commercial Advertisement	Legal	Films	Total
Number ...	287	602,750	96,403	70,063	60,931	15,898	6,050	4,747	20,863	546	200	325	45	879,108

BRITISH TRANSPORT COMMISSION TRAFFIC RECEIPTS

—	Four weeks to April 19		Aggregate for 16 weeks	
	1953	1952	1953	1952
	£000	£000	£000	£000
British Railways—				
Passengers...	8,656	8,781	28,631	28,013
Parcels, etc., by passenger train	2,873	2,676	11,145	10,518
Merchandise	7,893	7,722	33,239	32,964
Minerals	3,528	3,094	14,253	12,995
Coal & coke	8,245	7,644	34,790	32,243
Livestock	153	123	607	463
Total British Railways	31,348	30,040	122,665	117,196
British Railways, C. & D., etc. ...	876	859	3,529	3,520
British Road Services	5,850	5,789	23,809	23,796
Provincial & Scottish Buses	3,498	3,346	13,049	12,223
London Transport—				
Railways	1,342	1,405	5,467	5,249
Buses & coaches	2,994	3,004	11,626	10,923
Trolleybuses & trams	694	774	2,721	2,855
Total London Transport	5,030	5,183	19,814	19,027
Ships	723	735	2,432	2,502
Inland Waterways : Carrying ...	64	65	273	272
Total Passengers	17,501	17,609	62,350	60,087
Total Freight, Parcels & Mails ...	29,888	28,408	123,221	118,449
Inland Waterways : Tolls, etc. ...	100	100	421	417
Docks, Harbours, etc.	1,222	1,194	4,763	4,744
Hotels & Catering—				
Hotels	399	423	1,597	1,671
Restaurant cars	217	224	788	801
Refreshment rooms	630	573	2,273	2,087
Total Hotels & Catering	1,246	1,220	4,658	4,559
TOTAL	49,957	48,531	195,413	188,256

LONDON TRANSPORT

—	Passenger journeys	Inc. or dec. per cent. over 1952	Car miles	Inc. or dec. per cent. over 1952
	000		000	
Railways...	43,422	− 0·6	16,024	− 4·4
Buses & coaches	220,174	+ 2·3	26,318	+ 0·6
Trolleybuses & trams	57,619	− 7·2	5,692	−10·6
Total	321,215	+ 0·1	48,034	− 2·5

INLAND WATERWAYS

Tonnage of traffic and ton miles

—	Tonnage	Inc. or dec. per cent. over 1952	Ton miles	Inc. or dec. per cent. over 1952
	000		000	
Coal, coke, patent fuel & peat	488	+ 4·1	7,206	+ 5·1
Liquids in bulk	152	+ 34·6	3,998	+21·7
General merchandise	286	−15·6	4,455	− 1·9
Total	926	− 3·0	16,659	+ 6·7

BRITISH RAILWAYS

Rolling Stock Position

—	Operating stock	Number under repair	Available operating stock	Serviceable stock in 1952
Locomotives	18,616	3,235	15,381	15,779
Coaching vehicles	57,497	5,762	51,735	52,240
Freight wagons...	1,120,392	81,373	1,039,019	1,046,821

BRITISH RAILWAYS

Passenger Journeys (Month of March, 1953)

Full fares	Excursions, cheap day, etc.	Other descriptions	Early morning and workmen	Season tickets	Total	Inc. or dec. per cent. over 1952
16,710,000	17,648,000	3,331,000	16,968,000	22,382,000	77,039,000	−2·0

BRITISH RAILWAYS

Freight Tonnage Originating and Estimated Ton-Miles (Period No. 4)

—	Merchandise	Minerals	Coal & coke	Livestock	Total	Inc. or dec. per cent. over 1952
	000	000	000	000	000	
Tons originating ...	3,653	4,948	13,237	60	21,898	+3·6
Ton-miles	518,241*	414,905	796,006	—	1,729,152	+2·8

* Includes livestock

BRITISH RAILWAYS (Period No. 4)

—	Total steam coaching train-miles	Total electric coaching train-miles	Total freight train-miles	Freight train-miles per train engine-hour	Net ton-miles per total engine-hour	Locomotive coal consumption	
						Total tons	Lb. per engine-mile
1953	13,772,000	3,685,000	10,579,000	8·75	637	997,000	62·8
1952	13,614,000	3,671,000	10,457,000	8·70	617	1,009,000	63·7

Institution of Railway Signal Engineers

Visit to Witton Works of the General Electric Co. Ltd.

The annual summer meeting of the Institution of Railway Signal Engineers was held at Leamington from May 29 to 31. A party of some 70 members and ladies travelled from London on May 28, led by the President, Mr. T. Austin, supported by the Vice-Presidents, Mr. J. H. Fraser and Mr. E. G. Brentnall; also Messrs. F. L. Castle, A. Moss, R. Dell, F. Horler, S. Williams and T. S. Lascelles, Past Presidents; Messrs. D. G. Shipp and W. Owen, Members of Council; Mr. G. J. Dickin, Honorary General Secretary, Mr. B. Reynolds, Honorary Treasurer, and Mr. P. Guyatt, Honorary Secretary, General Purposes Committee.

On May 29 members visited the works of the General Electric Co. Ltd. at Witton, Birmingham, by permission of the Chairman, Sir Harry Railing, where they were welcomed on his behalf by Mr. C. J. O. Garrard, Manager, Switchgear Department. The party proceeded to inspect the heavy engineering, fan manufacture, transformer, switchgear and other sections of the establishment, including the high-voltage laboratory, where tensions up to 2½ million volts can be generated and where a display of high-tension discharges was given. The arrangements for the works tour were in the hands of Mr. D. J. Rollason, Head of the Training & Educational Department, and Mr. C. Hudson.

The visitors were shown many items of great interest, including large generating and transformer units intended for power installations in all parts of the world, and the elaborate equipment used to test them in various stages of erection. The belt conveyor mass production methods in the fan department were found specially interesting and were explained in detail.

The party was entertained to lunch, the chair being taken by Mr. J. J. Gracie, Director & General Manager, Witton Works, who was accompanied by Dr. C. C. Garrard, Resident Director and formerly Manager of the Transformer and Switchgear Departments, and several Heads of Departments.

Mr. Gracie, after proposing the Loyal Toast, expressed, on behalf of Sir Harry Railing and his board, a warm welcome to the party and appreciation of the Institution having elected to visit the factory. As an electrical firm they felt honoured because the President, Mr. Austin, was himself a G.E.C. man and had brought another with him, Mr. F. L. Castle, a Past-President, and other engineers in their concern. Although they might think of signal engineers as electrical men, they knew there was a mechanical side to their work and could sympathise with it, because in the manufacture of most electrical machinery some 90 per cent of the process involved mechanical engineering knowledge.

Mr. T. Austin, responding, thanked Mr. Gracie and the G.E.C. for all that had been done to give the visitors such an interesting time and for the generous hospitality accorded to them. He also thanked specially Messrs. Rollason and Hudson for the excellent manner in which the tour had been organised; also those who conducted the parties and the managers in each department, who had explained the various items of equipment.

Tea was served at the end of the afternoon visit and in the evening members and ladies attended a performance of "Antony and Cleopatra" at the Shakespeare Memorial Theatre, Stratford-on-Avon.

On Saturday, May 30, a coach tour was made through parts of Warwickshire and neighbouring counties. In the evening an informal dinner was held at Leamington, with Mr. T. Austin presiding. The guest of the Institution was Dr. D. J. Rollason of the G.E.C., accompanied by Mrs. Rollason, Mr. J. J. Gracie being prevented from attending.

After the Loyal Toast, Mr. T. Austin said that at Witton he had been more than pleased to see work being carried out by expert craftsmen in the heavy engineering shops in these days of mass production and diminishing reliance on the individual. On behalf of Mrs. Austin and himself he thanked everyone for the support they had given him in connection with the meeting.

Mr. J. H. Fraser, Vice-President, expressed the thanks of the party to Mr. Austin for arranging so successful a meeting, and to Mr. P. Guyatt and the General Purposes Committee for the excellent way in which they had organised it.

The dinner was followed by an entertainment, with Mr. J. E. Mott as Master of Ceremonies, and the party returned to London on May 31.

Re-styling Offices at London Transport Headquarters

New design adopted for private hire and traffic enquiry offices

The Private Hire and Traffic Enquiry offices at London Transport headquarters have been re-designed. The public enquiry counters have been modernised and the staff of the two offices re-deployed to make more economical use of the space available. It was found that a reduction in the open counter space enabled a more personal atmosphere to be introduced and, at the same time, freed much-needed room for the large volume of work carried out behind the scenes.

The two public counters, on opposite sides of the south entrance hall of St. James's Park Station, and separated from it by double swing doors, have been treated similarly in décor and lighting. The counters are flanked by maps of the system, posters and other topical traffic-promoting material. The general re-arrangement has been completed opportunely, for this year it is expected that the number of public enquiries on traffic matters and of tours, excursions or private hire, will be greater than ever before.

The Private Hire office is a section of the Commercial Department. It has its own fleet of 40 coaches especially for private contract and touring work; a number of double-deck buses also is allocated for contract carriage on weekdays. The mileage which was operated on private hire work alone during the year was some 1,500,000.

Last year more than 250,000 persons patronised the tour and excursion facilities offered by London Transport; for this year the programme has been more than doubled. On Coronation Day the office undertook the provision of the vehicles necessary to transport many of the police and contingents of the armed forces on duty.

Traffic Enquiries

The Traffic Enquiry office is a part of the public relations organisation. For counter enquiries, a 6 a.m. to 11.30 p.m. service is maintained; for telephone enquiries the office is manned day and night. For passengers who prefer to go as they please rather than in an organised party, the office works out suitable tours of both town and country beauty spots or places of interest by normal service routes. So great has been the post-war demand for bus top tours that a special pamphlet has been prepared giving sample bus rides to take in as many popular places in the Central Area as possible. Last year, some 680,000 enquiries were answered, a figure that will probably be exceeded this year.

Pan-American Railway Congress

The Pan-American Railway Congress Association will hold its first congress in the United States when the eighth congress convenes at Washington today. The congress is sponsored by the Government of the United States of America and the United States National Commission of the Pan-American Railway Congress Association, in collaboration with the Permanent Commission of the Pan-American Railway Congress Association, whose headquarters are at Buenos Aires.

The first congress took place at Buenos Aires in 1910. Congresses have been held subsequently at Rio de Janeiro (1922), Santiago (1929), Bogota (1941), Montevideo (1946), Havana (1948), and Mexico City (1950).

The United States Government, as host, has invited the other American republics and Canada to send official delegations. Invitations have also been extended to individuals, institutions, and organisations interested. The planning and co-ordination of arrangements are being conducted by the Organising Committee, whose chairman will preside at the preliminary session today, when officials will be elected.

The Washington part of the programme will consist mainly of section meetings and plenary sessions. Also included will be visits to railway installations around Washington and along the route to Atlantic City, where the formal closing plenary session will be held. At Atlantic City there will be an exhibit sponsored by manufacturers of railway equipment, and delegates will meet those of other railway organisations holding conventions there at the same time.

The prizes and diplomas being awarded for the best papers presented include those of $1,000 each by the Electro-Motive Division of the General Motors Corporation, the American Locomotive Company, and the International General Electric Company.

Inquiries about the congress should be addressed to the Executive Secretary of

the Organising Committee, VIII Pan-American Railway Congress, c/o Division of International Conferences, Department of State, Washington 25, D.C., U.S.A.

Considerations of Dutch Station Design

In the Netherlands, where many stations have had to be rebuilt after wartime destruction and traffic has been increased by electrification, the question of station design attracts particular attention. Of 43 towns with a population of more than 25,000 all but five are now served by electrified lines. Mr. H. G. J. Schelling, Chief Architect of the Netherlands Railways, has discussed in a paper different solutions and their application in recent design.

Relieving Congestion

The growing street congestion in the middle of the larger towns has made it all the more important for the station or stations to be situated within easy walking distance of the business centre. To allow this the railway must obviously be carried above or below street level. Because of the waterlogged subsoil of most Dutch towns, there is a natural preference for the removal of the railway to viaduct level, which, in general, also has the advantage of requiring fewer earthworks. Therefore, although it is recognised that a railway embankment or viaduct may form an undesirable barrier between different parts of the town, the line has been raised in a number of towns, as at Amsterdam and Leiden.

The layout of the station forecourt is governed by a number of considerations, some conflicting. In the design of the forecourt, each type of traffic must be considered separately with the aim of reducing walking distances and avoiding conflicting movements with other traffic flows.

Complete segregation of the arrival and departure flows is desirable and has been achieved occasionally, as at the Amstel Station in Amsterdam. Here, the entrances for pedestrians, passengers arriving by taxi, and as cyclists bringing their cycles to the storeroom are on one side, and the corresponding exits on the other side of the building. Tramway passengers have direct access from the low-level tram terminus by a subway which avoids crossing other road traffic.

Inclusion of Bus Station

Some forecourts recently redesigned include separate bus and coach stations for city and extra-urban traffic, with convenient and safe access to the railway station. At some, including Sittard, the bus station has saw-tooth shaped bays which are operated satisfactorily in spite of the need for the bus to pull back. Fish-bone patterns have been adopted elsewhere, as at Hengelo and Arnhem; they are easier to operate as the vehicles need not reverse, but the passenger must, of course, always cross a carriageway. Where there is sufficient space for a separate pull-in for each different bus route, a longitudinal bus station pattern may be preferable; recent examples are at Zutphen and Enschede.

The through station with elevated tracks is the most common layout found in recent Dutch construction and planning work. A feature having an important bearing on station design is the need for the proximity of booking office and luggage registration office, as in the Netherlands the booking clerks take the luggage registration fee.

The rule of the road being on the right, the obvious solution is to place the main entrance and exit in the left-hand corner of the station building (seen from the town side) so that most of the building is reserved for the booking and luggage registration offices required on the departure side, whilst the flow of arriving passengers crosses the far side of the building without conflicting with the other traffic flows in the station.

With this basic layout, a further distinction can be made between four different layout solutions, according to whether the combined booking and luggage office is placed close to the departure flow or some distance from it in the far corner of the building, and whether it faces that flow. The situation of the booking and luggage office directly adjacent to the entrance door of the departure traffic is not favoured because the office cannot be seen quickly enough by passengers entering the building. Each of the other three varieties has its merits, which have been adopted in one or more recently designed stations.

Booking Office Layout

Much progress has been made in details of station building design, such as doors and booking office equipment. The latest booking office design adopted by the Netherlands Railways has low-level ticket racks placed perpendicularly to a wholly glazed window frontage so that, without prejudice to safety requirements, there is much more contact between booking clerks and the public. Time studies have been carried out to determine the average times required for ticket sales with different booking office layouts, and consequently, the number of ticket windows needed.

Faced with so many functional requirements, the station architect must be able to reconcile them with each other and with the predominantly architectural and æsthetic requirements to be considered. Such varied designs as Amsterdam-Amstel, Enschede, Hengelo, Zutphen, Arnhem, and Leiden testify to the successful solution of these problems.

The work of station reconstruction at Leiden is particularly remarkable as it has been made necessary by the raising of the tracks of the Amsterdam-Rotterdam line through the centre of the town.

ALL-WELDED TUBULAR TOWER CRANE.—The Brayda tubular tower crane, of Swiss origin, re-designed, developed, and fabricated by W. E. Bray Limited, Feltham, using Quasi-Arc Radian electrodes for welding, consists of a main tubular column fabricated from plate and varying in diameter from approximately 3 ft. at the bottom to 1 ft. 9 in. at the top, with a trussed tubular jib. The whole structure is mounted on a chassis of all-welded construction, incorporating geared turntable and wheels for a 10-ft. railway track. The tubular jib is fabricated in two main sections for ease of assembly. Each section consists of tubes ranging in size from 2½ in. outside dia. to 5 in. outside dia., and connections are either direct to tubes or through gusset plates slotting into the tubes. The two sections are pinned together on the centre lines of the main chords to give a boom of 73 ft. overall length. The crane has a maximum working radius of 65 ft. 6 in., lifting 1 ton 9·5 cwt. to a height of 83 ft., and in its maximum elevated position can lift 3 ton 9 cwt. to a height of 131 ft. 6 in. on a radius of 20 ft. The prototype jib was recently in use at London Airport, where it replaced three of the conventional derrick type cranes, and is now in service in Kuwait.

Iraqi State Railways Personalities

A group taken in the garden of the Royal Palace, Baghdad, at a banquet and reception given by King Feisal II. Left to right: Mrs. H. L. W. Stevens; Mr. E. P. Zarah, Controller of Stores; Colonel H. L. W. Stevens, Technical Expert, Stores; and Mr. W. J. Moffatt, Technical Inspector General, Iraqi State Railways

Contracts & Tenders

The Crown Agents for the Colonies have placed an order with the Birmingham Railway Carriage & Wagon Co. Ltd. for the following rolling stock for the Nigerian Railway:—

24 third class coaches
9 first and second class composite day coaches
6 third class brake coaches

British Railways, Eastern Region, have placed a contract with Tersons Limited, Finchley, N.3, for renewal of permanent way, Doncaster District.

W. Gilmour Smith & Co. Ltd. has received an order for twelve sets of Fibreglass insulation for Class "56" Beyer-Garratt locomotives being built for the East African Railways. The locomotives were subcontracted on the authority of the Crown Agents for the Colonies by Beyer, Peacock & Co. Ltd. to Société Anglo-Franco-Belge de Materiél de Chemin de Fer.

The Director General of Supplies & Disposals, Railway Stores Directorate, New Delhi, is inviting tenders for:—

1,860 coupling screws, 2 in. dia. (b.g.), without pin shackle collar and rivets for coaches, wagons, engines and tenders.
240 shackle for screw couplings (b.g.), $1\frac{9}{16}$ in. dia. pin hole.

Tenders are to be submitted to the Director General of Industries & Supplies, Shahjahan Road (Section SRI), New Delhi, quoting ref. SRI/16290-D/IV, and will be received up to 10 a.m. on June 30.

The Special Register Information Service of the Board of Trade, Commercial Relations & Exports Departments, reports that the United Kingdom Trade Commissioner at Johannesburg has notified a call for tenders issued by the South African Railways, Stores Department, for the supply of:—

1,000 lightning arresters, double safety, width not to exceed 1 in.
3,000 fuse bases, 250 V. for cartridge fuses.
1,200 blocks, terminal moulded with 12 O.B.A. terminals.
150 condensers, adjustable, 20 mfd.
50 detectors, point.
60 facing locks and detectors.
100 locks, lever and circuit controller, combined 5 in. stroke.
80 locks, lever and circuit controller, combined 8 in. stroke.
3 signal indications route multilamp, type L.R. complete with series proving relay-transformer double letters.
4 signals indication multilamps, l. range, complete with series proving relay-transformer single letters.
25 two-position light shunt signals.
70 three-aspect signals searchlight, l. range.
20 signals "A" light units, complete with brackets and U belts.
100 transformers, indication.
100 transformers, track feed.

Tenders, which should reach the Chairman of the Tender Board, P.O. Box 7784, Johannesburg, by 9 a.m. on July 2, should be enclosed in a sealed envelope marked "Tender No. C.6392: Electrical Signalling Material." A copy of the tender documents is available for inspection at the Board of Trade (Room 6176) until June 15, and thereafter on loan in order of application. Reference CRE/19206/53 should be quoted.

The Special Register Information Service of the Board of Trade, Commercial Relations & Export Department, reports that the United Kingdom Trade Commissioner at Johannesburg has notified a call for tenders issued by the South African Railways, Stores Department, for:—

1,200 couplings, vacuum hose, $\frac{3}{4}$ in. dia.
70,000 couplings, vacuum hose, 2 in. dia.

Tenders, which should reach the Chairman of the Tender Board, P.O. Box 7784, Johannesburg, by 9 a.m. on Thursday, July 16, 1953, should be enclosed in a sealed envelope marked "Tender No. B.5970: For Vacuum Brake Gear Metal Parts."

A copy of the tender documents is available for inspection at the Board of Trade (Room 6176) until June 24, and thereafter on loan in order of application. Reference CRE/19205/53 should be quoted.

Notes and News

Railway Draughtsman-Surveyor Required.—Applications are required for the post of railway draughtsman-surveyor, between 25 and 30 years of age, required by a firm of railway contractors. See Official Notices on page 691

Brush Aboe Group Renamed.—The Brush Aboe Group is to be known in future as the Brush Group. Brush Limited is the registered title of the holding company, and the title of the parent company, the Brush Electrical Engineering Co. Ltd., is retained as the name of the company representing the electrical side of the group's business.

Royal Journey to the Derby.—The Queen and the Duke of Edinburgh went by rail from Victoria to Tattenham Corner to see the Derby on June 6. The train, composed of four Pullman cars and hauled by "Schools" class locomotive *Brighton*, left Victoria at 12.10 p.m. and travelled by way of Balham and East Croydon.

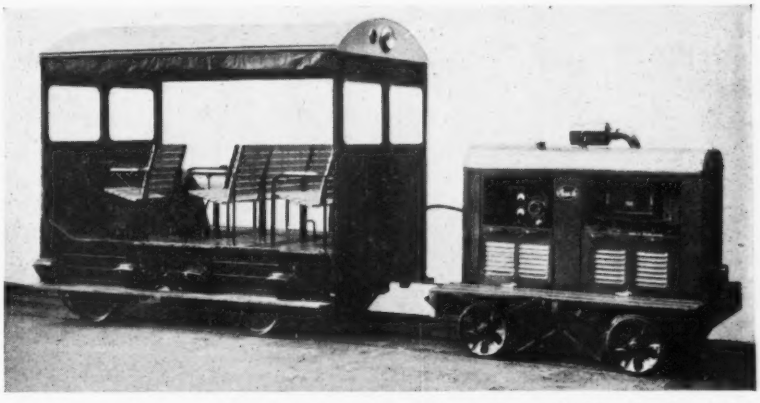
Mobile Welding Plant. — The Quasi-Arc Co. Ltd. has supplied a diesel driven mobile welding plant to the Mauritius Government Railways. The equipment, which was supplied under the supervision and inspection of the Crown Agents for the Colonies, consists of a 2VSH Ruston diesel engine driving a 300 amp. welding generator equipped with dual voltage and current control. It is mounted on a special trolley designed and supplied by D. Wickham & Co. Ltd., Ware, Herts, and is towed to site by a specially designed petrol driven rail car equipped with seats to carry the maintenance gang. The whole unit comprises a very compact and effective repair outfit which can operate anywhere along the railway line with the minimum of delay and inconvenience.

British Railways Coal, Iron, and Steel Traffic.—During Coronation week and up to 6 a.m. on June 8, British Railways clearance of deep-mine and opencast coal amounted to 2,312,590 tons, including 354,460 tons carried during the weekend. During the week ended May 30, 215,539 tons of iron and steel from the principal steel works and 318,500 tons of iron ore were conveyed.

Inaugural Run of "Tees-Tyne Pullman."—The $232\frac{1}{4}$ miles from Darlington to Kings Cross were covered by the "Tees-Tyne Pullman" in 223 min. non-stop on June 8, the first day of the summer timetable. The schedule is 229 min., so that arrival was 6 min. early. The eight Pullmans weighed 316 tons net. The prewar streamliner, the "Silver Jubilee," with a load of some 248 tons net, was allowed 198 min. for the non-stop journey.

Netherlands Signalling Industry. — In reporting the annual general meeting of the Western India Section of the Institution of Railway Signal Engineers in our April 3 issue, reference was made to an agreement for the manufacture of American signalling apparatus in Holland under licence. We now hear from Mr. J. H. Verstegen, President of Nederlandsche Machinfabriek Alkmaar, that this allusion was to the formation after the war by the General Railway Signal Company of the U.S.A. and Philips of Eindhoven of a company, Spoorwegseinindustrie G.R.S., at Bossum, Holland, with licence to manufacture G.R.S. material for Holland, Indonesia and some Continental countries. Philips Telecommunication Industry and Alkmaar were chosen as manufacturers of this new signalling equipment. Reference to these arrangements in Mr. Verstegen's talk at the meeting did not imply that Alkmaar could do business in India otherwise than in mechanical and electro-mechanical signalling equipment which is not associated with the G.R.S. apparatus.

London Transport Coronation Day Traffic.—The London Transport Executive has estimated provisionally that its road and rail services carried two million passengers (representing 4,000,000 passenger journeys) to and from the Coronation Area on



Mobile diesel-driven welding plant type DE. 300 recently supplied by the Quasi-Arc Co. Ltd. to the Mauritius Government Railways

June 2. Ten thousand Underground train trips and 44,000 bus journeys were made into and out of the Central area over a period of nearly 24 hr. non-stop travel. Special early and extra late services were heavily used.

Shipment of First Toronto Underground Cars.—The first two of the 104 coaches being built by the Gloucester Railway Carriage & Wagon Co. Ltd. for the Toronto Transportation Commission are expected to be shipped from Avonmouth on June 28.

Tecalemit Regional Sales Offices.—The establishment is announced by Tecalemit Limited of regional sales offices each under the control of a Regional Manager. Locations are: Scottish Region (also covering Northern Ireland), 86, Cambridge Street, Glasgow, C.2 (Mr. E. R. Hart); Northern Region (also covering Isle of Man), North Road, Wetherby, Yorks (Mr. S. H. Smith); and London & Midland Region, Great West Road, Brentford (Mr. L. R. Hedgcock). The Western & Southern Regional Office is at the company's Main Office at Plymouth.

Gatwick Airport.—Development at Gatwick Airport was discussed recently by the London & South Eastern Regional Board for Industry. The main points were the possible inconvenience to industry caused by noise from aircraft and congestion on the London-Brighton main line of the Southern Region. Discussions are taking place between the Ministry of Civil Aviation and the Railway Executive on the possibility of congestion on the railway, with the object of ensuring that development of the airport will not prejudice the interests of railway users.

British Journals at Canadian International Trade Fair.—The combined display of 55 technical, trade, and specialised periodicals staged by eight British publishing houses at the 1953 Canadian International Trade Fair held in Toronto on June 1-12, is shown in the accompanying illustration. Eight Tothill Press publications were shown, including *Diesel Railway Traction*. As recorded in last week's issue, Mr. D. G. C. Mockridge, an executive of Associated Iliffe Press Limited, has been the British representative.

Sissons Brothers Norwich Depot.—Sissons Brothers & Co. Ltd. have opened their latest depot at Rosemary Lane, Norwich (tel.: 24093). Mr. L. W. Fugill will be Manager.

British United Traction Limited: Diesel Train Division.—The directors of British United Traction Limited have announced the formation of a new division to handle the design, development, and marketing of diesel train units and components throughout the world. The B.U.T. Company was formed shortly after the war to market the joint trolleybus products of Leyland Motors Limited and A.E.C. Limited. The full resources of both companies will be combined to design and produce a range of diesel powered trains and units suitable for world as well as home markets.

Alan Muntz and General Motors Agreement.—Alan Muntz & Co. Ltd., of Hounslow, Middlesex, have signed an agreement with the General Motors Corporation of Detroit, Michigan, U.S.A., relating to both free-piston gasifiers and free-piston compressors which have been developed by the Société d'Etudes et de Participations of Geneva and the Société Industrielle Générale de Mécanique Appliquée of Paris on the one hand and Alan Muntz & Co. Ltd. on the other under complementary agreements with the Marquis de Pescara and the Société des Auto-Compresseurs Pescara. The arrangement gives the General Motors Corporation rights which Alan Muntz & Co. Ltd. control in the British Commonwealth.

"Value" Tickets Suggestion.—The issue of "value" tickets where it was not possible to carry stocks of printed through tickets was made by the Chairman of the magistrates at Grays, Essex, when several people were summoned for travelling on the railway without paying their fares and with intent to avoid payment. It was explained that at Barking, passengers could transfer from London Transport to Eastern Region trains without going out of the station. They could book through to Tilbury at some stations but not at others. The Magistrate said that by having "value" tickets the railways could do away with "this business of giving inspectors money" when passengers had not got time to leave the platform and buy a ticket.

Salvador Railway Company. — Gross receipts of the Salvador Railway for the year to June 30 last were £171,205, compared with £169,895 in the preceding year. Expenses rose from £161,013 to £180,067, leaving a net loss of £8,862, compared with a profit the year before of £8,882. The debit balance carried forward is increased from £67,897 to £89,586.

Educational Excursions in the North Eastern Region.—This summer, 23 day and 15 half-day private educational excursions for school parties comprising 1,850 adults and 18,500 children are being run by the North Eastern Region. These trains are being run usually on Thursdays and Fridays, mainly to destinations such as London, Edinburgh, Liverpool and Chester. In some cases meals are being provided in the train.

American Car & Foundry Company.—Mr. John E. Rovensky, of the American Car & Foundry Company, has announced that consolidated net earnings of the company for the fiscal year ended April 30, 1953, amounted to slightly over $10.00 per share on the common stock, after taxes and reserves and preferred dividend requirements. In the previous year earnings after preferred dividends amounted to $8.63 per share on the common stock.

General Electric (U.S.A.) Report.—In its report for 1952 the General Electric Company of the U.S.A. states that during the year about 200 G.E. electric locomotives and 700 sets of electrical apparatus for diesel-electrics built by the American Locomotive Company were produced for use in America. In addition the company shipped 100 units to railways in South America, Europe, Africa, and Asia. It is reported that business in this field has increased five-fold in the last ten years. Reference is also made to the order for 15 more gas turbine-electric locomotives received from the Union Pacific Railroad in 1952. Among orders received by the International General Electric Company, which handles General Electric business outside the U.S.A. and Canada, was one for 61 diesel-electric locomotives for Chile.

Salvador Railway Co. Ltd.—A statement by the Chairman of the Salvador Railway Co. Ltd., for presentation at the annual general meeting, reports that for the year to June 30, 1952, there was an operating loss equivalent to some £15,526. Revised passenger rates brought a slight increase of 1 per cent in gross receipts but traffic volume declined, the number of passengers by nearly 5 per cent and freight tonnage by some 3 per cent. After the presentation of demands by the unions which included increases of around 100 per cent in wages, a transport tribunal composed of representatives of the Ministries of Labour and Economy, the unions, the International Railways of Central America, and the Salvador Railway, met to consider the situation. Subsequently findings were

Display of technical, trade, and specialised periodicals staged by British publishing houses at the Canadian International Trade Fair, Toronto

OFFICIAL NOTICES

The engagement of persons answering Situations Vacant advertisements must be made through a Local Office of the Ministry of Labour or a Scheduled Employment Agency if the applicant is a man aged 18-64 inclusive or a woman aged 18-59 inclusive unless he or she, or the employment, is excepted from the provisions of the Notification of Vacancies Order, 1952.

RAILWAY DRAUGHTSMAN-SURVEYOR Required by large firm railway contractors, applicants must have ability to carry out site surveys, plot same in layout form to good working scale (detailing for manufacture of turnouts etc., done by other draughtsmen), capable of full use of theodolite and level, duties to include site supervision of contracts in progress, age 25-30 years, man with British Standard Specification experience preferred, conditions of employment to include provision of car, all travelling and general expenses, five-day week on rota system, comprehensive, superannuation, scheme, etc., write in first instant, stating age, experience and salary required.—Box 861, *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

FOR SALE. B.H. Rails, 95 lb. Large quantity. PIKE BROS., Private Sidings, Coinbrook, Bucks. Phone 175.

THE PERUVIAN CORPORATION have the following vacancies on the railways in Peru:—Central Railway. ACCOUNTANT (Traffic Auditor). About 30 years of age, preferably single with general auditing and railway accounting experience. Southern Railways. ASSISTANT CIVIL ENGINEER (Divisional) with practical experience on railway maintenance. Guaqui-La Paz Railway, Bolivia. TWO ASSISTANT ENGINEERS, one with Electrical Mechanical Apprenticeship including experience with diesel engines and the other with Apprenticeship Permanent Way Department of British railway and with Drawing Office experience. Good education activity and first class health essential, age 25/30, single. Northern Railways. DIESEL ENGINEER with practical experience on diesel locomotives and railcars and workshop management. A knowledge of the Spanish Language is preferable in all these apointments or willingness to learn within 6 months. Apply: SECRETARY, 144, Leadenhall Street, London, E.C.3.

THE "PAGET" LOCOMOTIVE. Hitherto unpublished details of Sir Cecil Paget's heroic experiments. Eight single-acting cylinders with rotary valves. An application of the principles of the Willans central-valve engine to the steam locomotive. By James Clayton, M.B.E., M.I.Mech.E. Reprinted from *The Railway Gazette*, November 2, 1945. Price 2*s*. Post free 2*s*. 3*d*. *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

THE LAST DATE for receipt of Tenders for 6 Transit Sheds for Chittagong Port scheduled to be received by the DIRECTOR GENERAL OF RAILWAYS, GOVERNMENT OF PAKISTAN, Karachi, by June 16, 1953, has now been extended to June 23, 1953.

N.E.R. HISTORY.—Twenty-Five Years of the North Eastern Railway. 1898-1922. By R. Bell, C.B.E., Assistant General Manager, N.E.R. and L.N.E.R. Companies, 1922-1943. Full cloth. Cr 8vo. 87 pages. 10*s*. 6*d*.—*The Railway Gazette*, 33, Tothill Street, London, S.W.1.

BOUND VOLUMES.—We can arrange for readers' copies to be bound in full cloth at a charge of 25*s*. per volume post free. Send your copies to the SUBSCRIPTION DEPARTMENT, Tothill Press Limited, 33, Tothill Street, London, S.W.1.

THE GAS-TURBINE LOCOMOTIVE. A technical description of the gas-turbine recently constructed by the Metropolitan-Vickers Electrical Co. Ltd. for the Western Region, British Railways. Subjects dealt with include body construction, bogies, traction motors, prime mover, generators and auxiliary equipment. A folding plate drawing of the locomotive is included together with illustrations and diagrams. Reprinted from *The Railway Gazette*, February 1, 1952. Price 5*s*. Post free 5*s*. 2*d*. *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

published which recommended an upwards revision of the company's rates, as well as those of its competitors—the International Railways, and the Agencia Salvadorena (which operates the port of La Libertad). It is considered that, although road competition may whittle away the advantages in rates for passengers and local freights, there should be an overall improvement in the company's net revenue.

Pressed Steel Co. Ltd.—At the annual meeting of the Pressed Steel Co. Ltd. on May 29 the Chairman, Major Albert Pam, stated that the company's Linwood factory was working to full capacity on the manufacture of railway wagons and agricultural machinery. During the year total sales had increased by over 10 per cent and the company's profit by £76,000; however, taxation had absorbed £112,000 more than last year and their charge for depreciation and obsolescence was higher by £87,000. Thus their net profit was lower by £123,000, but was still £802,849, after again providing £250,000 for the increased replacement cost of plant, machinery and equipment.

British Insulated Callender's Cables Limited.—Sir Alexander Roger, Chairman of British Insulated Callender's Cables Limited, states in his annual report that the trading profits of the parent company for 1952 were £6,020,851, an increase of £1,435,183 over the figure for 1951. Total profits of the group amounted to the record figure of £9,423,182. After making various charges and provisions the amount left available was £8,333,581, out of which £4,869,146, or 58 per cent, was absorbed by taxation. The Chairman refers to a 12½ per cent increase in the overall volume of output. The increase was spread generally throughout the range of B.I.C.C. products, but particular mention is made of an all-time record throughput in the rolling mills of almost 80,000 tons of copper and aluminium.

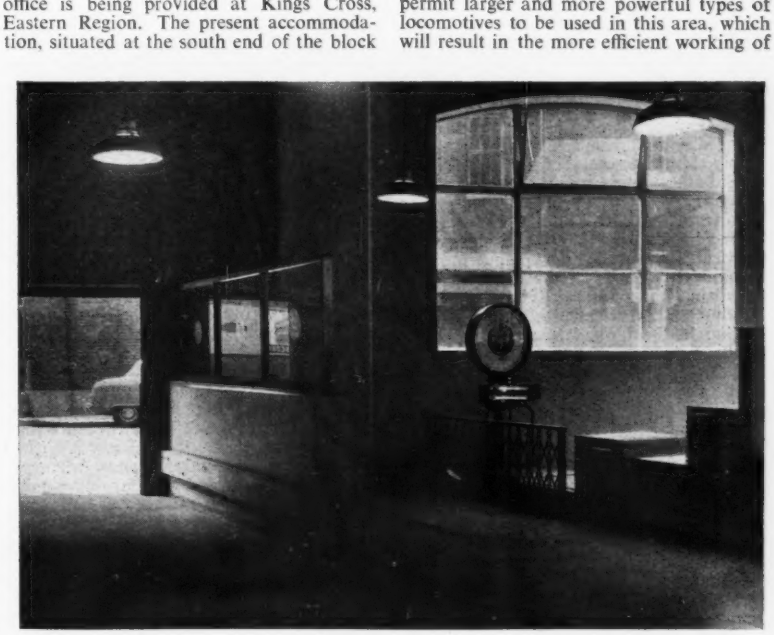
Injection and Electrical Equipment for Diesels.—A representative range of fuel injection equipment for diesel engines and electrical appliances for charging, starting, lighting, and similar duties will be shown by C.A.V. Limited at the Engineering & Marine Exhibition in London from September 3 to 17. C.A.V. fuel injection pumps, nozzles, and fuel oil filters will be exhibited in section to show their constructional details. Also in the exhibition will be complete and sectioned models of C.A.V. mechanical pressure lubricators suitable for a variety of machines. Electrical equipment will include dynamos and starter motors, among the latter being a type in which full voltage is not applied until the pinion has engaged with the flywheel gear ring. The stand will also display switch and fuse panels, lead, acid and alkaline batteries, and marine spotlights.

Canadian Pacific Railway Dividend.—At a meeting of the board of the Canadian Pacific Railway held in Montreal on June 8 a dividend of two per cent on the preference stock was declared in respect of the year 1953, payable on August 1, 1953.

New Parcels Acceptance Office for Kings Cross.—A new parcels acceptance office is being provided at Kings Cross, Eastern Region. The present accommodation, situated at the south end of the block of buildings to the rear of Platform 10, is now inadequate. Work is in progress on adapting the northern portion of the Mailbag Depot premises in the station approach opposite the Main Line Booking Hall. When completed this new office will provide spacious up-to-date facilities for acceptance of parcels.

Rubber Company's London Office.—Marshall-Howlett Limited, an associated company of Morrison, Marshall & Hill Limited, has been appointed London agent of William Currie & Co. (Rubber Manufacturers) Ltd., of Caledonian Rubber Works, Edinburgh. The London office address is 44, Tower Hill, E.C.3. Telephone: Royal 1461.

Installation of 70-ft. Turntable at Melton Constable.—A 70 foot turntable installed at Melton Constable Motive Power Depot, Eastern Region (late M.G.N.J.R.) will permit larger and more powerful types of locomotives to be used in this area, which will result in the more efficient working of



New parcels acceptance office adapted from portion of Mailbag Depot premises at Kings Cross, Eastern Region

heavy excursion trains from the Midlands to Great Yarmouth over the former M.G.N.J.R. The old turntable, which measured 47 feet, was over 69 years old, and is believed to have been constructed by the late Midland & Great Northern Joint Committee, whose repair works were at Melton Constable. The new table, which is vacuum operated, was built by Ransomes & Rapier Limited, and was previously located at Grantham.

Taltal Railway Company.—At the recent annual meeting in London of the Taltal Railway Co. Ltd., the Chairman, Mr. C. H. Pearson, said he regretted having to report a loss on the year of £11,975, as against £18,531 for the previous twelve months. These figures included a loss on exchange of net current assets of some £4,600, against £10,600 last year. The railway's position today was serious, and working losses had swallowed up nearly all the company's cash resources in Chile. Mr. A. S. Matthews, a Director, had examined the situation on the spot in Chile and had submitted an application to the Government for a tariff increase of 50 per cent. News had since been received that an increase equivalent to some 36 per cent had been allowed. It was the considered opinion of the board, based on Mr. Matthews' report on his visit to Chile, that the future of the railway must rest on the actions of the Chilean Government.

British Timken Limited.—At the annual general meeting of British Timken Limited on June 4 the Chairman, Mr. John Pascoe, stated that the company had obtained permission from the Capital Issues Committee to capitalise a further £800,000 of its revenue reserves and that it was proposed to issue to ordinary shareholders two new fully paid ordinary shares for every three now held. Reviewing operations during the year, the Chairman said that the company's increased productive capacity in all its factories was very fully occupied. Turnover for every operating company very considerably exceeded that for 1951. Demand for larger types of bearings remained as high as ever in the company's history. All their factories were still working on a day and night shift and apart from an unexpected deterioration in the trade situation they should be well occupied for the remainder of the year.

U.S.A. Exhibition of Railway Products.—The Exhibit Convention of the Railway Supply Manufacturers' Association is to be held at Atlantic City, N.J., from June 22 to June 27. This event will be held in conjunction with the annual meetings of the mechanical, purchases and stores, and electrical sections of the engineering and mechanical divisions of the Association of American Railroads. Members of the Eighth Pan American Railway Congress meeting in the United States at this time will be the guests of the Association from June 22-25. Members of the Association will display products they manufacture for use by railways. These will be displayed in the convention hall, over a space of 12,000 sq. ft., and on 4,000 linear feet of track space at the Coach Yard of the Pennsylvania-Reading Seashore Lines, Atlantic City, where locomotives, passenger and freight cars and other equipment will be seen. Further information may be had from the Railroad Supply Manufacturers' Association, 60, East 42nd Street, New York 17, N.Y. Foreign manufacturers of railway supplies must be members of the Association in order to exhibit, and members or invited guests in order to attend the convention.

Forthcoming Meetings

June 15 (*Mon.*) to 17 (*Wed.*).—British Iron & Steel Research Association, at Ashorne Hill, Leamington Spa. Conference on Heat Treatment Practice.

June 18 (*Thu.*).—Institution of Civil Engineers at Great George Street, Westminster, S.W.1, from 7.45 to 12 p.m. Conversazione.

June 20 (*Sat.*).—British Railways, Southern Region, Lecture & Debating Society. Afternoon visit to London Transport Garage at Reigate.

June 24 (*Wed.*) to 26 (*Fri.*).—British Wood Preserving Association Annual Convention at Trinity College, Cambridge.

June 25 (*Thu.*).—Railway Students' Association. Evening visit to inspect new signal installation at Euston Station, London Midland Region of British Railways.

June 27 (*Sat.*).—Railway Students' Association. Summer outing to Woking and Hindhead. Party assemble at 2 p.m. at Woking Station, British Railways, Southern Region.

June 27 (*Sat.*).—Permanent Way Institution, Leeds and Bradford Section. Visit to Earles Cement Works at Hope.

June 28 (*Sun.*).—Railway Correspondence & Travel Society. Twenty-fifth anniversary special to Exeter. Train will leave Waterloo Station, British Railways, Southern Region, at 9.45 a.m.

June 29 (*Mon.*).—Indian State Railways Annual Dinner at the Rembrandt Hotel, Thurloe Place, London, S.W.7, at 7 for 7.30 p.m.

July 1 (*Wed.*) to 3 (*Fri.*).—Institute of Transport Annual Congress in Glasgow.

July 4 (*Sat.*).—Irish Railway Record Society. Half-day visit to the railway system of Messrs. Arthur Guinness Son & Co. (Dublin) Ltd.

Railway Stock Market

A general tendency to await developments in Korea was reflected in stock markets, where the prevailing trend has been firm, though the volume of business remained small and buying interest was centred on British Funds. Already tin and other metal prices have declined further in price on the assumption that peace in Korea would mean slowing down rearmament, and shares of base metal mines have lost ground. Industrial shares were generally uncertain because sentiment appeared to be affected by the fear of a recess in U.S.A. during the switch from rearmament work to industrial activities. The prevailing view, however, is that these fears are exaggerated.

The general assumption is that British Funds will go to higher levels. There is the prospect of a lower bank rate in due course, and there is now also some buying of British Funds because it is argued that they will offer an attractive means of acquiring steel shares, as gilt-edged stocks will be able to be offered in exchange for these shares. On the other hand, the big steel issues pending, which it is assumed will be made at prices showing yields of around 7½ per cent, will attract much money which would go into other securities. There may, moreover, be considerable switching from industrials.

Rather more business has been done in foreign rails this week, among which United of Havana stocks have been outstanding on the latest developments and reports from Havana indicating fresh moves for taking over the railway. It is widely assumed that in any case the directors would not agree to sale for less than £5,000,000 or its equivalent; and on this basis the company's various stocks resulting from the reorganisation effected earlier this year would be worth more than their current prices. This shows why they attract much speculative support whenever there are reports and rumours of a take-over deal for the railway. It is also possible that in any agreement payment for the railway might be spread over a period of years. At the time of going to press, United of Havana stocks have not held all the rise shown earlier in the week, and the "A" stock after jumping to 68 came back to 65. The "B" was 59, the second income stock 27, and the consolidated stock 4¾.

Dorada Railway ordinary stock has changed hands around 50, and Costa Rica around 11½. Taltal Railway shares marked 14s. 9d. and Nitrate Rails were 21s. There has been a big business in Quito bonds, which after falling heavily on the debt settlement, made a partial recovery to 40.

Among Indian stocks, Barsi were dealt in around £117½.

Canadian Pacifics eased to $47⅝ with the trend of New York markets earlier in the week: the 4 per cent preference stock was £64½ and the 4 per cent debentures £82¼. Elsewhere, White Pass & Yukon remained active but erratic and are $32½ at the time of going to press with the convertible debentures at £113.

In other directions, Manila "A" debentures were £80 and the 5 per cent preference shares 8s. 3d. Mexican Central "A" debentures were dealt in around 72.

San Paulo ordinary units, after easing on the latest news regarding the company's claims, strengthened a little at 6s.

Antofagasta ordinary and preference stocks were 8¼ and 43 respectively, while the 5 per cent debentures were dealt in at 63½.

Among road transport shares, West Riding were 36s. 3d., Southdown 32s. 6d., and Lancashire Transport 49s. 6d. B.E.T. deferred stock moved up to £535 waiting the financial results.

Engineering and kindred shares have been quietly steady, with Vickers at 49s. 6d., Guest Keen 47s. 6d., and John Brown 38s. 7½d. Thornycroft were 32s. 3d. "ex rights" to the new shares, which were at a premium of 10s. 10½d. over the issue price of 20s. In other directions, Tube Investments firmed up to 56s. 3d., Babcock & Wilcox improved to 64s., and Clarke Chapman to 61s. 3d. T. W. Ward were 71s. 6d. and Ruston & Hornsby 35s. 9d.

It is likely that engineering and kindred shares will remain quiet until the first of the big steel issues are made, news of which is expected next month.

Among shares of locomotive builders and engineers, Beyer Peacock were 32s. 6d., North British Locomotive 13s. 1½d., Vulcan Foundry 20s. 3d., Gloucester Wagon 10s. shares 11s. 3d., Wagon Repairs 5s. shares 11s. 6d., and Charles Roberts 5s. shares 14s. 6d. Central Wagon were dealt in around 69s.